



BASIC HOSPITAL CORPS SCHOOL



HANDBOOK II

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FOREWORD

MISSION OF NAVAL HOSPITAL CORPS SCHOOL:

To train Sailors to perform as basic Navy Hospital Corpsmen.

The Student Handbook series was written to be used in the fourteen-week curriculum of the Basic Hospital Corps School. There are three Handbooks in the series:

Handbook I - Fundamentals

Handbook II - Emergency Care

Handbook III - Nursing Care

The Student Handbooks contain reading and study material to supplement the classroom lectures and demonstrations conducted during the course. Each topic in the course has a section in one of the Handbooks. The text is followed by a Worksheet, which provides study questions based on the learning objectives. The Worksheet questions are similar to those on the written examinations.

Tips for Success, eight pages of study techniques, test taking strategies, and suggestions for time management follow the Foreword in Handbook I.

The Student Handbooks are best used to read and prepare for upcoming classroom lectures, to re-read and fill-in the worksheet assignments and finally, re-reading as many times as necessary in preparation for written examinations and laboratory performance.

Students who keep their Handbooks after graduation will find them to be an excellent study guide for advancement examinations and an outstanding reference during future duty assignments.

Study smart or study hard, the choice is yours.

Naval Hospital Corps School is accredited by the Council on Occupational Education



TABLE OF CONTENTS

	Foreword.....	i
Lesson 2.01	Medical/Legal Ethical Issues	1
	Medical/Legal Ethical Issues Worksheet.....	3
Lesson 2.02	Lifting and Moving a Patient	5
	Lifting and Moving a Patient Worksheet.....	11
Lesson 2.03	Airway Management.....	15
	Airway Management Worksheet	17
Lesson 2.04	Scene Size-Up Safety.....	19
	Scene Size-Up Safety Worksheet	21
Lesson 2.05	Patient Assessment.....	23
	Patient Assessment Worksheet	25
Lesson 2.06	Respiratory Emergencies	29
	Respiratory Emergencies Worksheet.....	31
Lesson 2.07	Diabetic and Altered Mental Status	33
	Diabetic and Altered Mental Status Worksheet.....	35
Lesson 2.08	Poison and Substance Abuse	37
	Poison and Substance Abuse Worksheet	39
Lesson 2.9	Allergies.....	41
	Allergies Worksheet.....	43
Lesson 2.10	Environmental Injuries.....	45
	Environmental Injuries.....	47
Lesson 1.24	Managed Care Concepts	49
	Managed Care Concepts Worksheet.....	51
Lesson 1.25	Health Promotion Program	53
	Health Promotion Program Worksheet.....	57
Lesson 2.11	Behavioral Emergencies	59
	Behavioral Emergencies Worksheet	65
Lesson 2.12	Obstetrics & Gynecology.....	67
	Obstetrics & Gynecology Worksheet	69
Lesson 2.13	Infants and Children.....	71
	Infants and Children Worksheet	73

Lesson 2.14	Bleeding and Shock	75
	Bleeding and Shock Worksheet	77
Lesson 2.15	Soft Tissue Injuries	79
	Soft Tissue Injuries Worksheet	81
Lesson 2.16	CBR Casualties	83
	CBR Casualties Worksheet	91
Lesson 2.17	Musculoskeletal Injuries	95
	Musculoskeletal Injuries Worksheet	97
Lesson 2.18	Head and Spine Injuries	99
	Head and Spine Injuries Worksheet	101
Lesson 2.19	Triage and Medical Decision Making	103
	Triage and Medical Decision Making Worksheet	109

Lesson 2.01

Medical/Legal and Ethical Issues

Terminal Objective:

2.01 List medical/legal and ethical issues related to Emergency Medical Services.

Enabling Objectives:

2.01.01 Define the scope of practice for a Hospital Corpsman.

2.01.02 Define consent and list methods of obtaining consent.

2.01.03 State the need, benefit, and usage of advanced directives.

2.01.04 List implications for abandonment, negligence, and battery of a patient.

2.01.05 List the legal aspects of patient confidentiality.

2.01.06 List the principles of universal precautions.

HOMEWORK:

1. Reading Assignment:
 - a. Emergency Care, Ninth Edition: Chapter 3, pp. 32-45.
 - b. Health Insurance Portability and Act (HIPPA) of 1996 Information sheet
2. Written Assignment: Complete Worksheet 2.01.

NOTES/COMMENTS

HEALTH INSURANCE PORTABILITY AND ACCOUNTABILITY ACT (HIPPA) OF 1996 Information Sheet

Historically, health regulation has fallen primarily under state jurisdiction. Each state governs the licensing of health providers, regulates their practice, and governs the use and disclosure of health information. State laws differ widely in protection, complexity and coverage. There has been no single statute in the U.S. governing health data. To address the need for a national privacy standard for patient records, the U. S. Congress passed the Health Insurance Portability and Accountability Act of 1996 (HIPPA). The Act mandated the Department of Health and Human Services (DHHS) develop regulations to protect the security and privacy of individually identifiable health information transmitted in any format by covered entities. HIPPA privacy rules took effect on April 14, 2003.

Terms found within the HIPPA regulation:

Privacy: An individual's right to control the use and disclosure of personal information.

Confidentiality: A status accorded to information that indicates it is sensitive for stated reasons and therefore must be protected, and access to it controlled.

Security: The safeguards (administrative, technical, or physical) in an information system that protect it and its contents against unauthorized disclosure, and limit access to authorized users in accordance with an established policy.

WHO AND WHAT IS COVERED

- Health plans, e.g. insurers, managed care organizations, and federal health programs
- Health clearinghouses that unify data in standardized formats
- Health care providers who engage, directly or through contractual arrangements, in HIPPA standard electronic transactions, e.g., computer to computer transmission of healthcare claims, payment and remittance, benefit information, and/or health plan eligibility information
- Personal Health Information (PHI), individually identifiable health information transmitted in any format (electronic, paper or oral) by covered entities.

PATIENTS' RIGHTS

HIPPA privacy rules emphasize the importance of patient privacy rights. Individuals must be informed about how their health information is used and disclosed.

Patient rights are:

- Education on privacy protections: Providers and health plans are be required to give patients a clear written explanation of how the organization may use and disclose their health information
- Access to their medical records: Patients will be able to see, obtain copies of their records, and request amendments
- Provide consent before information is released: Health care providers who see patients will be required to obtain patient consent before sharing private information about treatment and payment.
- Request restrictions on the uses and disclosures of their information
- Recourse if privacy protections are violated

The DHHS Office for Civil Rights, which is responsible for implementing the Privacy rules, can impose civil monetary penalties and criminal penalties for certain wrongful disclosures of protected information.

Practicing confidentiality and protecting consumer privacy has been mandated in providing health care. HIPPA provides a comprehensive federal privacy standard for the protection of patient health information.

Lesson 2.01

Medical/Legal and Ethical Issues Worksheet

1. _____ is permission from the patient and is required for any treatment or action by the HM.
2. Care may be given to a child or mentally incompetent adult in cases of life-threatening illness or injury based on _____ consent when a parent or guardian is not present.
3. Once treatment has begun, a patient may not refuse any care.
 - a. True
 - b. False
4. One of the things that must happen in order for a patient to refuse care or transport includes signing of a(n) _____ form.
5. A(n) _____ is a legal document usually signed by the patient and his/her physician which states that the patient has a terminal illness and does not wish to prolong life through resuscitative efforts.
6. Negligence is a failure to act properly.
 - a. True
 - b. False
7. To prove negligence, it must be shown that there was a duty to act, a standard of care was not provided, and in not providing the standard of care harm was caused to the patient.
 - a. True
 - b. False
8. If the patient has no legal documentation, and refuses care, _____ consent takes over upon loss of consciousness.
9. Any advanced directive requires a _____.
10. _____ means beating, wounding, or touching in an offensive manner.
11. Once care has been initiated and an EMT-B then leaves a patient without assuring that the patient has been turned over to someone with equal or greater medical training, _____ exists.
12. Confidential information may be disclosed when either written or verbal permission is given by the patient.
 - a. True
 - b. False
13. Patient care information may be shared with other health care professionals if they _____.

14. _____ is the most common form of advanced directive.
15. When in doubt if an advanced directive exists, assume _____ consent and deliver care to maximum capabilities.
16. The HM must obtain consent before treating a patient or he/she could be found guilty of _____.
17. The Occupational Safety and Health Administration (OSHA) and Center for Disease Control and Prevention (CDC), issue standards and guidelines concerning Universal Precautions.
 - a. True
 - b. False
18. All blood and body fluids should be considered _____.
19. Another term for Universal Precautions is _____.
20. Eye protection must provide protection from the front and sides.
 - a. True
 - b. False

Lesson 2.02

Lifting and Moving a Patient

Terminal Objective:

2.02 List the procedures to lift and move, transfer, patient.

Enabling objectives:

2.02.01 Define body mechanics

2.02.02 State guidelines for using proper body mechanics.

2.02.03 List the guidelines and safety precautions for lifting a patient.

2.02.04 List the guidelines for reaching, pushing and pulling a patient.

2.02.05 List principles for emergency, urgent, and non-urgent moving of a patient.

2.02.06 Describe and identify selected patient carrying devices.

2.02.07 List guidelines for positioning patients with traumatic injuries and medical conditions.

2.02.08 Lift and move a patient using various devices.

2.02.09 State the location and proper use of safety devices on a wheelchair, gurney, and bed

HOMEWORK:

1. Reading Assignment: a. Emergency Care, Ninth Edition: Chapter 5, pp. 80-103
b. Read Transferring, and Ambulating Information Sheet
2. Written Assignment: Complete Worksheet 2.02.

LABORATORY:

1. The laboratory for this lesson is Performance Checklist 2.02.

Lesson 2.02

Lifting and Moving a Patient Worksheet

1. _____ is the proper use of your body to facilitate lifting and moving.
2. When lifting, your feet should be on a firm, level surface and positioned _____ apart.
3. When lifting a patient carrying device, it is best to use an even number of people.
 - a. True
 - b. False
4. Two methods that can help prevent injury when lifting are the _____ and power grip.
5. To prevent injury avoid reaching more than _____ inches in front of your body.
6. Push, rather than pull, whenever possible in order to prevent injury.
 - a. True
 - b. False
7. An urgent move is required when the patient must be moved prior to beginning or completing an assessment, immobilizing the patient's spine, or moving a stretcher into position.
 - a. True
 - b. False
8. List three situations when an injured patient should be moved with an emergency move.
 - a. _____
 - b. _____
 - c. _____
9. The greatest danger to the patient in an emergency move is possible aggravation of a(n) _____ injury.
10. An emergency move of a patient with a suspected spine injury involves moving the patient in the direction of the long axis of the body when possible.
 - a. True
 - b. False
11. Rapid moves called drags are reserved only for emergencies because they do not provide protection for the _____ and _____.

12. Urgent moves are used when a patient must be moved to treat an immediate threat and are performed with spinal precautions.
- a. True b. False
13. When there is no immediate threat to life and the patient is moved when ready for transportation, a(n) _____ move is used.
14. The safest level of a wheeled stretcher is _____
15. A wheeled stretcher is good for level and uneven surfaces.
- a. True b. False
16. The _____ is a patient carrying device that transports the patient in a sitting position, which greatly reduces the length of the patient and device, allowing the EMT-B to maneuver around corners and through narrow spaces.
17. There are two types of spine boards, or backboards: _____ and _____.
18. A scoop (orthopedic) stretcher splits into two pieces vertically and is recommended for patients with suspected spinal injury.
- a. True b. False
19. Unresponsive patients without suspected spinal injury should be placed in the _____ position.

Lesson 2.03

Airway Management

Terminal Objective:

2.03.1 Demonstrate airway management using airways, suction equipment, oxygen equipment, and resuscitation devices.

Enabling Objectives:

- 2.03.01 Label the major structures of the respiratory system.
- 2.03.02 List the signs of adequate and inadequate breathing.
- 2.03.03 State the influence of mechanism of injury on opening an airway.
- 2.03.04 List indications for using a portable suction unit and catheters.
- 2.03.05 List selected techniques of artificial ventilation.
- 2.03.06 State the procedure for artificially ventilating a patient using a pocket mask.
- 2.03.07 List the signs of adequate and inadequate artificial ventilation when using a bag- valve mask.
- 2.03.08 List safety precautions for providing oxygen therapy.
- 2.03.09 List the indications for using a non-rebreather mask.
- 2.03.10 List guidelines for using a nasal cannula.
- 2.03.11 List characteristics of and indications for using airway adjuncts.
- 2.03.12 Demonstrate measuring and inserting an oropharyngeal airway.
- 2.03.13 Demonstrate artificially ventilating a patient using a bag-valve mask.
- 2.03.14 Demonstrate using portable suction.
- 2.03.15 Demonstrate measuring and inserting a nasopharyngeal airway.
- 2.03.16 Demonstrate the application of a non-rebreather mask and a nasal cannula.
- 2.03.17 Perform basic emergency care for dyspnea.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition: Chapter 6, pp. 104-143
2. Written Assignment: Complete Worksheet 2.03.

Lesson 2.03

Airway Management Worksheet

1. All cells in the body require oxygen to survive.
 - a. True
 - b. False
2. Oxygen and carbon dioxide are exchanged between the _____ and _____ in the lungs.
3. The reduction of breathing to the point where oxygen intake is not sufficient to support life is called _____.
4. To determine the signs of adequate breathing, you should _____, _____ and _____.
5. Respirations that are too fast or too slow or cyanosis are signs of _____ breathing.
6. For an unconscious patient suspected of having a head, neck, or spinal cord injury, open the airway using the _____ maneuver.
7. To determine the signs of adequate artificial ventilations, watch the chest _____ with each ventilation.
8. The most difficult part of delivering BVM artificial ventilations is obtaining _____.
9. When using a BVM device, the one-person technique is preferred over the two-person technique.
 - a. True
 - b. False
10. The most common airway obstruction is the _____.
11. An airway device should be used on all _____ patients who do not exhibit a _____.
12. To select the proper size oropharyngeal airway for your patient, measure from the _____ to the tip of the patient's _____ on the same side of the face.
13. A nasopharyngeal airway should only be used on a patient without a gag reflex.
 - a. True
 - b. False
14. To keep a patient's airway clear, you need to _____ whenever a gurgling sound is heard.
15. Suctioning should be performed for no longer than _____ seconds at a time.
16. Insufficient supply of oxygen to the body's tissues is called _____.
17. A nonrebreather oxygen mask, when connected to the proper liter flow of oxygen, can

deliver _____ % oxygen concentration.

18. The three most used oxygen cylinders in emergency medical care are:

a. _____

b. _____

c. _____

NOTES/COMMENTS

Lesson 2.04

Scene Size-up and Safety

Terminal Objective:

- 2.04 Evaluate a scene for potential hazards, determine if additional help is necessary, and evaluate mechanism of injury or nature of illness.

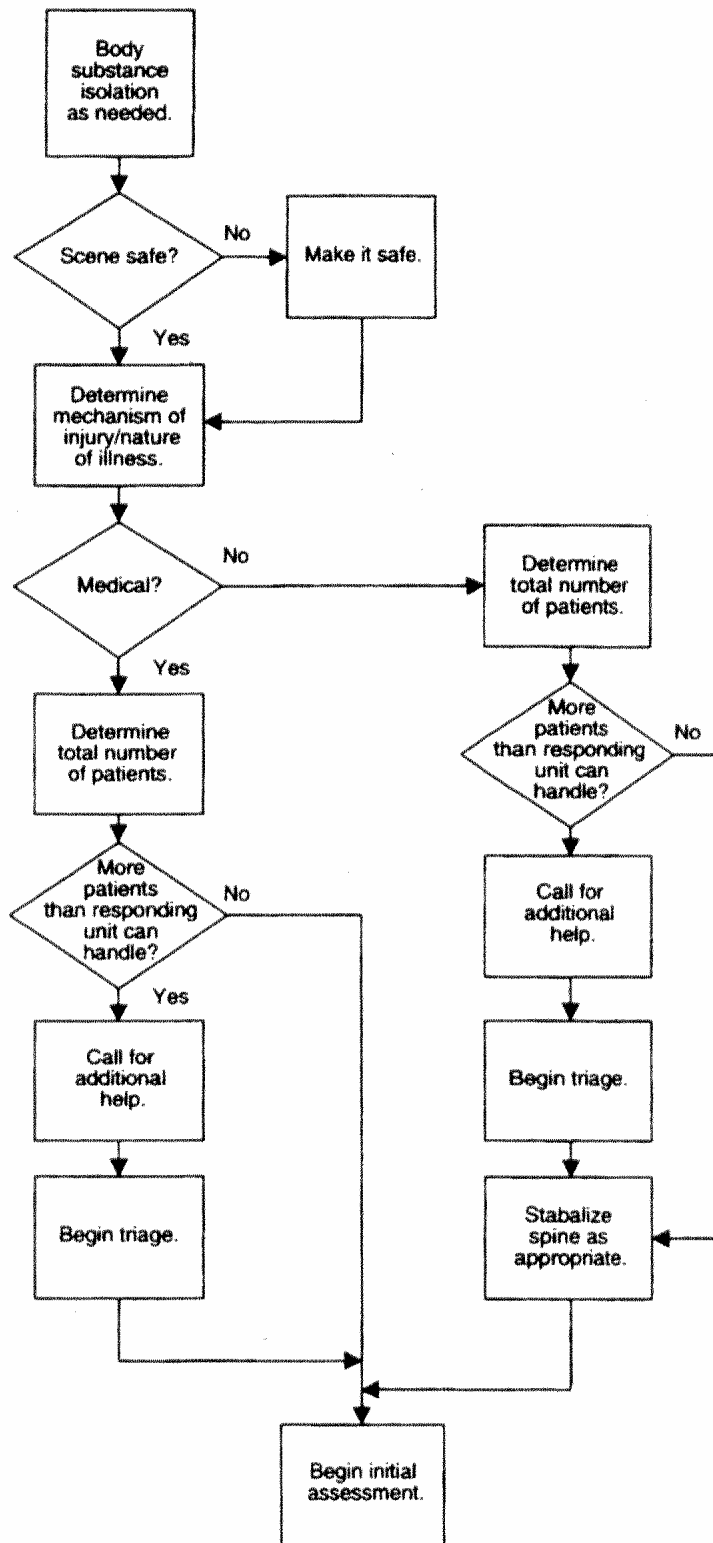
Enabling Objectives:

- 2.04.01 List potential hazards found at the medical or trauma scene and determine if it is safe to enter.
- 2.04.02 State the rationale for evaluating scene safety prior to entering.
- 2.04.03 List common mechanisms of injury and nature of illnesses.
- 2.04.04 List guidelines for requesting additional assistance at the medical or trauma scene.
- 2.04.05 Identify the potential hazards to approaching an individual in need of emergency medical care, given various scenarios.
- 2.04.06 List reasons for determining scene safety.
- 2.04.07 State the importance of universal precautions.
- 2.04.08 Describe the steps to take for personal protection from airborne and blood borne pathogens when providing emergency care.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition: Chapter 7, pp. 144-163
2. Written Assignment: Complete Worksheet 2.04.

Flowchart



Lesson 2.04

Scene Size-Up Worksheet

1. List the three questions regarding safety that must be answered during scene size-up.
 - a. _____
 - b. _____
 - c. _____
2. Scene size-up is confined to the first part of the assessment process.
 - a. True
 - b. False
3. Police and fire fighters are already on the scene of a single car accident and assure you the scene is safe. Do you need to do your own scene safety check?
 - a. Yes
 - b. No
4. The mechanism of injury is defined as _____.
5. There are five different types of motor vehicle collisions. Because of multiple impacts, which has the potential to be the most serious? _____
6. When treating a patient who has called an ambulance for a medical reason, instead of using the mechanism of injury, look at the _____.
7. The primary objective of universal precautions is for the safety of the _____ and _____.

NOTES/COMMENTS

Lesson 2.05

Patient Assessment

Terminal Objective:

2.05 Perform a patient assessment.

Enabling Objectives:

- 2.05.01 State the importance of performing a primary assessment.
- 2.05.02 State the mechanism of injury considerations and reasons for performing a primary assessment.
- 2.05.03 State the importance of performing a secondary assessment.
- 2.05.04 List “signs” and “symptoms” in a list of diagnostic findings and state the examination techniques used to determine them.
- 2.05.05 Describe diagnostic “signs” with normal and abnormal findings.
- 2.05.06 List the signs and symptoms of acute abdominal distress.
- 2.05.07 Perform a complete primary assessment.
- 2.05.08 Perform a complete secondary assessment.
- 2.05.09 Assess a patient with suspected acute abdominal distress
- 2.05.10 Record patient assessment findings.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition, Chapter 8, pp. 162-177, Chapter 9, pp 178-195, Chapter 10, pp 196-231 and Chapter 11, pp 232-245.
2. Written Assignment: Complete Worksheet 2.05.

LABORATORY:

1. The laboratory for this lesson is Performance Checklist 2.05.

NOTES/COMMENTS

Lesson 2.05

Patient Assessment Worksheet

- The purpose of the primary assessment is to allow you to discover and immediately treat any life threatening problems.
 - True
 - False
- List two significant mechanisms of injury:
 - _____
 - _____
- A Secondary Assessment is needed to discover and treat injuries/illness not found during the Primary Assessment.
 - True
 - False
- Emergency medical treatment may often be based on the patient's history or the signs and symptoms that you discover. Identify which are signs and which are symptoms.

a. Nausea	_____	e. Pain	_____
b. Vomiting	_____	f. Blurred vision	_____
c. Swelling	_____	g. Bleeding	_____
d. Itching	_____		
- List five diagnostic signs.
 - _____
 - _____
 - _____
 - _____
 - _____
- What are normal respirations for an adult? _____

7. When assessing the mental status of a patient, an easy way to remember the levels of responsiveness is to use the letters AVPU. If you have a patient who does not respond unless you briskly rub the sternum, which letter would best indicate the patient's level of consciousness? _____.
8. The single most reliable sign in assessing the status of the CNS is _____.
9. The first step in performing the Primary Assessment is _____.
10. When evaluating a patient for injuries, you are looking and feeling for a variety of things. The letters DCAP-BTLS are used to sum them up. List the terms associated with the letters.
- a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
 - f. _____
 - g. _____
 - h. _____
11. Three items done during circulation check are:
- a. _____
 - b. _____
 - c. _____
12. Crepitus may be palpated over bony areas.
- a. True
 - b. False
13. List the four different parts or steps to the ongoing assessment.
- a. _____
 - b. _____
 - c. _____
 - d. _____

14. You should perform the ongoing assessment whenever you see a change in the patient's condition.
- a. True b. False
15. In what position should a patient with suspected acute abdominal distress be placed? _____
16. List three symptoms of abdominal distress.
- a. _____
- b. _____
- c. _____
17. List two items that should be included when documenting care provided.
- a. _____
- b. _____
18. You will want to get a SAMPLE history of your patient. List three parts of a SAMPLE history.
- a. _____
- b. _____
- c. _____
19. A fall of more than _____ feet or _____ times the patient's height is considered to be a significant mechanism of injury.
20. When treating an unresponsive patient, after practicing BSI and assessing scene safety, you should determine if there is a mechanism of injury.
- a. True b. False

NOTES/COMMENTS

Lesson 2.06

Respiratory Emergencies

Terminal Objective:

- 2.06 State the assessment for respiratory difficulty and the emergency medical care for respiratory emergencies.

Enabling Objectives:

- 2.06.01 List signs and symptoms of adequate and inadequate respiration/air exchange.
- 2.06.02 State the emergency medical care procedure for a patient with breathing difficulty.
- 2.06.03 List signs and symptoms of breathing difficulties.
- 2.06.04 Distinguish between the emergency medical care of the infant, child, and adult patient with breathing difficulties.
- 2.06.05 Differentiate between upper and lower airway obstruction/disease in infants and children.
- 2.06.06 State how medical direction is needed in the emergency medical care of a patient with breathing difficulty.
- 2.06.07 Explain how to assist a patient to use an inhaler.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition: Chapter 17, pp. 320-335.
2. Written Assignment: Complete Worksheet 2.06

NOTES/COMMENTS

Lesson 2.06

Respiratory Emergencies Worksheet

1. The normal adult breathing rate is _____ breaths per minute.
2. The normal breathing rate for a child is _____ breaths per minute.
3. A patient's use of accessory muscles is a normal sign of breathing.
 - a. True
 - b. False
4. During patient assessment, make sure the patient is breathing, and that the patient is breathing _____.
5. Agonal respirations are sporadic, irregular breaths usually seen just before respiratory arrest.
 - a. True
 - b. False
6. A patient may have a regular breathing rhythm and not have enough oxygen flowing throughout the body.
 - a. True
 - b. False
7. Respiratory conditions are a leading killer of infants and children.
 - a. True
 - b. False
8. The pulling in of the muscles between the ribs and above the clavicles are signs of inadequate breathing found in infants and children.
 - a. True
 - b. False
9. Normal breathing may be determined by observing for rate, rhythm, and _____.
10. The diaphragm is a muscular structure that divides the chest cavity from the _____ cavity.
11. You should use a(n) _____ when the patient will not tolerate a mask.
12. If an infant or child is experiencing breathing difficulties there will be a slight increase in pulse early on.
 - a. True
 - b. False

- 13. Treatment of a patient who has breathing difficulty may include the administration of oxygen with a nonrebreather mask.
 - a. True
 - b. False

- 14. Administering high-flow oxygen to emphysema patients over time can shut down their “hypoxic drive” to breathe.
 - a. True
 - b. False

- 15. Wheezing is a sign of an upper airway breathing difficulty.
 - a. True
 - b. False

- 16. Treatment of a child experiencing a lower respiratory disease or infection includes inserting an oropharyngeal airway.
 - a. True
 - b. False

- 17. An infant or child's upper airway is frequently blocked by blood, secretions, or the _____.

- 18. Treatment of a patient who has breathing difficulty may include the administration of oxygen with a nonrebreather mask at _____ liters per minute.

- 19. The prescribed inhalers known as albuterol, isoetharine, metaprotaranol are _____ names for medications.

- 20. The patient has a prescribed inhaler the other two indications for use are _____.

- 21. List three indications to assist a patient to use a prescribed inhaler:
 - a. _____.
 - b. _____.
 - c. _____.

NOTES/COMMENTS

Lesson 2.07

Diabetic Emergencies and Altered Mental Status

Terminal Objective:

- 2.07 State the emergency medical care for a patient with a diabetic emergency and altered mental status.

Enabling Objectives:

- 2.07.01 Define terms related to diabetes mellitus, altered mental status, and stroke.
- 2.07.02 List the signs and symptoms associated with diabetic emergencies.
- 2.07.03 State the differences between hypoglycemia and hyperglycemia.
- 2.07.04 List the emergency medical care, for a patient taking diabetic medication with altered mental status and a history of diabetes.
- 2.07.05 State the difference between airway management of conscious and unconscious patients when administering oral glucose.
- 2.07.06 State the indications, contraindications, actions, and side effects of oral glucose.
- 2.07.07 State the types of seizures and their causes.
- 2.07.08 List the emergency medical care for a patient with a seizure disorder.
- 2.07.09 List the signs and symptoms of stroke.
- 2.07.10 State emergency medical care of a patient with symptoms of stroke.
- 2.07.11 Assess a patient with altered mental status and signs and symptoms of hypoglycemia/hyperglycemia.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition: Chapter 19, pp. 370-387.
2. Written Assignment: Complete Worksheet 2.07.

NOTES/COMMENTS

Lesson 2.07

Diabetic Emergencies and Altered Mental Status Worksheet

1. The first indication that a patient may be a diabetic is an _____ mental status.
2. Appropriate treatment of the diabetic patient requires the HM to know and understand diabetes.
 - a. True
 - b. False
3. Glucose is a form of sugar and is the body's basic source of _____.
4. A rapid onset of abnormal behavior and sweaty skin may be indications of a patient suffering from a diabetic emergency.
 - a. True
 - b. False
5. Quick administration of oral glucose for the hypoglycemic patient is appropriate, providing the patient is _____ and can swallow.
5. Diabinese, Orinase, and Micronase are trade names for an oral insulin medication.
 - a. True
 - b. False
7. If local protocol permits, the Corpsman may give oral glucose if the patient has an altered mental status, can swallow, and has a history of diabetes.
 - a. True
 - b. False
8. Adults who have diabetes are more at risk for medical emergencies than are children?
 - a. True
 - b. False
9. Head injuries can cause seizures.
 - a. True
 - b. False
10. To prevent the seizure patient from further injury, the Corpsman should hold the patient still during convulsions.
 - a. True
 - b. False

Match the definition with the correct type of seizure:

11. Febrile ___ a. seizures with an unknown cause
12. Metabolic ___ b. seizures caused by high fever
13. Toxic ___ c. seizures caused by irregular body chemistry
14. Infection ___ d. seizures caused by an inflammation of the brain
15. Idiopathic ___ e. seizures caused by drugs
16. Sometimes it is appropriate to place a tongue depressor into the mouth of a patient experiencing a seizure.
- a. True b. False
17. Seizures caused by high fevers are common in children.
- a. True b. False
18. After a seizure patient's convulsions have ended, you should place the patient in supine position.
- a. True b. False
19. Treatment of a patient experiencing a seizure includes protecting the patient's airway and spinal cord and administering supplemental _____ if the patient is cyanotic.
20. For a patient having a seizure, you should loosen any of the patient's restrictive clothing.
- a. True b. False

Lesson 2.08

Poisoning, Overdose Emergenies

Terminal Objective:

- 2.08 State the emergency medical care for a patient with poisoning or overdose emergency and a patient whose condition is caused by substance abuse.

Enabling Objectives:

- 2.08.01 List ways that poisons may enter the body.
- 2.08.02 List signs and symptoms associated with poisoning.
- 2.08.03 State the emergency medical care for the patient with suspected poisoning or overdose.
- 2.08.04 State the guidelines for administering activated charcoal.
- 2.08.05 List signs and symptoms of substance abuse or withdrawal.
- 2.08.06 State the emergency medical care for the patient with an emergency arising from substance abuse.
- 2.08.07 Assess a patient for suspected poisoning or overdose.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition: Chapter 21, pp. 402-423.
2. Written Assignment: Complete Worksheet 2.08.

NOTES/COMMENTS

Lesson 2.08

Poisoning, Overdose Emergenies Worksheet

1. A poison is any substance that can harm the body.
 - a. True
 - b. False
2. Poisons can enter the body by absorption, injection, or _____.
3. The drug of choice for most poisoning and overdose cases is _____.
4. The recommended infant or child dosage of activated charcoal is _____ grams.
5. You should administer activated charcoal to a 45-year-old patient who, while siphoning gasoline, accidentally swallowed some of it.
 - a. True
 - b. False
6. Activated charcoal is indicated for a 2-year-old patient who swallows toilet bowl cleaner.
 - a. True
 - b. False
7. Many inhaled poisons can also be absorbed through the skin.
 - a. True
 - b. False
8. Activated charcoal should be administered to a patient who has ingested poison and has an altered mental status.
 - a. True
 - b. False
9. A poisonous substance secreted by bacteria, plants, or animals is called a(n) _____.
10. Ingested poisons are sometimes diluted by directing the patient to drink water or _____.
11. You should suspect _____ poisoning whenever treating a patient who has been in an enclosed area and complains of nausea, dizziness, breathing difficulty, and a headache.
12. A patient is complaining of severe pain to his eyes after a car battery exploded while he was working around it. His eyes should be irrigated with clean water for _____ minutes.
13. What is the single most important treatment for inhalation injuries? _____
14. One side effect of activated charcoal is a _____ stool.

15. Gross tremors of the hands may be seen with alcohol withdrawal.
- a. True
 - b. False

NOTES/COMMENTS

Lesson 2.09

Allergies

Terminal Objective:

2.09 State the emergency medical care for allergies.

Enabling Objectives:

2.09.01 Define terms related to allergic reactions.

2.09.02 List the possible causes of allergic reactions.

2.09.03 List signs and symptoms of a patient with an allergic reaction.

2.09.04 List the emergency medical care for a patient with an allergic reaction.

2.09.05 List the steps for administering epinephrine auto injector.

2.09.06 State when and when not to use an epinephrine auto injector.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition: Chapter 20, pp. 388-403.
2. Written Assignment: Complete Worksheet 2.9.

NOTES/COMMENTS

Lesson 2.09

Allergies Worksheet

1. Itchy skin, wheezing, an increased heart rate, and watery eyes are signs of a(n) _____ reaction.
2. Anaphylactic shock may occur in a matter of moments or may be delayed 30 minutes or more.
 - a. True
 - b. False
3. Patients experiencing an allergic reaction can have progressive _____ compromise.
4. A patient with a reported allergy to bee stings was stung moments before you arrived. He is not wheezing, denies respiratory difficulty and blood pressure is within normal limits. Treatment should include the administration of epinephrine by auto-injector as a precautionary measure.
 - a. True
 - b. False
5. Epinephrine is a(n) _____ medication name.
6. A patient experiencing a severe allergic reaction will have _____ blood pressure.
7. The recommended dosage of epinephrine for an infant or child with a severe allergic reaction is _____ mg.
8. The recommended dosage of epinephrine for an adult with an allergic reaction is _____ mg.
9. To administer epinephrine, the tip of auto-injector is inserted into the portion of the patient's _____.
10. Supportive care of the patient with a severe allergic reaction includes the administration of _____.

NOTES/COMMENTS

Lesson 2.10

Environmental Injuries

Terminal Objective:

2.10 State the emergency medical care for a patient with an environmental injury.

Enabling Objectives:

- 2.10.01 Define terms relating to environmental injuries.
- 2.10.02 Define ways that the body loses heat.
- 2.10.03 List the predisposing factors of hypothermia.
- 2.10.04 List the signs and symptoms of hypothermia.
- 2.10.05 State the emergency medical care for hypothermia, including assessment and documentation of patient response on a prehospital care report.
- 2.10.06 List the signs and symptoms of local cold injuries.
- 2.10.07 State the emergency medical care for local cold injuries.
- 2.10.08 List the predisposing factors of selected heat related emergencies.
- 2.10.09 List the signs and symptoms of selected heat related emergencies
- 2.10.10 State the emergency medical care for heat exposure, including assessment.
- 2.10.11 State the basic principles of hyponatremia
- 2.10.12 List the signs and symptoms of near-drowning/ drowning victims.
- 2.10.13 State the emergency medical care of a near drowning patient, including assessment.
- 2.10.14 List complications of near drowning.
- 2.10.15 List the signs and symptoms of bites and stings.
- 2.10.16 State the emergency medical care of bites and stings
- 2.10.17 Assess a patient for cold related injuries.
- 2.10.18 Assess a patient for heat related injuries.

2.10.19 Assess a patient for near drowning.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition: Chapter 22, pp. 424-449.
2. Written Assignment: Complete Worksheet 2.10.

Lesson 2.10

Environmental Injuries Worksheet

Match the letter of the definition with each term which describes the way in which a body loses heat.

1. Conduction ___ a. perspiration on the skin vaporizes
 2. Convection ___ b. the body exhales warm air
 3. Radiation ___ c. transfer of heat from one material to another through direct contact.
 4. Evaporation ___ d. currents of air or water pass over the body, carrying away heat.
 5. Respiration ___ e. heat the body sends out in waves
6. Most radiant heat loss occurs from the patient's head and neck.
- a. True b. False
7. Cooling affecting the entire body is a problem known as _____.
8. Infants, young children, and the elderly are more prone to hypothermia than young adults.
- a. True b. False
9. Shivering is a sign of severe hypothermia.
- a. True b. False
10. Assessment of the hypothermic patient's skin temperature includes placing the back of your hand inside the patient's clothing and on the patient's _____.
11. Active rewarming of a hypothermic patient can be dangerous if the condition is more serious than believed.
- a. True b. False
12. Central rewarming is the application of heat to the hypothermic patient's lateral chest, neck, armpits, and _____.
13. Muscles and bones can become frozen in late cold injuries.
- a. True b. False
14. Skin that appears white and waxy with swelling and blistering is a sign of _____ local cold injury.

15. Skin that reddens then whitens, with the area feeling numb is a sign of _____ local cold injury.
16. Active rewarming of frozen parts is seldom recommended.
- a. True b. False
17. The medical term for an abnormally high body temperature is _____.
18. Treatment of the patient with moist, pale, normal-to-cool skin includes applying cool packs to the patient's neck, groin, and armpits.
- a. True b. False
19. Treatment of the bee sting patient includes removing the stinger and removing any constricting items on the effected extremity.
- a. True b. False
20. Treatment of a snakebite includes placing an ice bag on the wound and then contacting medical control.
- a. True b. False

Lesson 1.24

Managed Care Concepts

Terminal Objective:

1.24 List the basic concepts of managed care.

Enabling Objectives:

1.24.01 Define terms related to managed care.

1.24.02 List the purposes of data management/information systems in healthcare.

1.24.03 List the role of the Hospital Corpsman in computer data management for healthcare.

1.24.04 List the purposes of the TRICARE Program.

1.24.05 List the levels of care under TRICARE.

HOMEWORK

1. Reading Assignment: Managed Care Concepts Information Sheet
2. Written Assignment: Complete Worksheet 1.24.

MANAGED CARE CONCEPTS INFORMATION SHEET

Managed Care is a system for managing the delivery of health care. The purpose of managed care is threefold:

- a. to expand access to care, or to make health care more available to patients
- b. to control the rising costs of health care
- c. to sustain a high quality of health care

Military medical **beneficiaries** are the people who are eligible for medical benefits from the Department of Defense (DOD). In general they are active duty personnel and their family members, and retirees and their qualified family members. At one time, the military provided most of the medical care required by its beneficiaries.

In cases where military care was not available, the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) allowed military beneficiaries to seek civilian care. The cost of the civilian care was shared by CHAMPUS and the beneficiary. Today, rapidly rising health care costs and the closure of military bases, along with their hospitals, require the government to find new ways to provide health care to DOD beneficiaries. **TRICARE** is that new way. **TRICARE** is the name of the DOD managed care program. It works by combining military and civilian resources to increase access, control costs, and maintain high quality of health care. TRICARE offers beneficiaries three choices for their health care: TRICARE Prime, TRICARE Standard or TRICARE Extra. When a beneficiary chooses one of these options he/she agrees to the

terms of the option usually for one year, this is called **enrollment**. Under the **TRICARE Prime** option, most care will come from a military treatment facility; all active duty service personnel are enrolled in TRICARE Prime. **TRICARE Standard** is the new name for traditional CHAMPUS utilizing both military and civilian providers, beneficiaries enrolled in this option pay annual deductibles and cost shares for treatment. Under the **TRICARE Extra** option, care is provided by civilian facilities within an authorized provider network and cost shares for treatment are less to enrollees than the TRICARE Standard option. There are advantages and limitations to all three options. A **Health Benefits Advisor, Managed Care Office**, or **TRICARE Service Center** is available in every geographic region to educate and assist beneficiaries in making the best TRICARE enrollment choice.

Additional terms and concepts which are frequently used when discussing TRICARE include: **Primary care manager (PCM)** is the patient's principal provider for routine medical needs. Under TRICARE Prime, the PCM also monitors care and makes referrals for tests or specialty care. The PCM is usually a physician or physician group, but can also be a nurse practitioner, a physician assistant or independent duty corpsman practicing under the supervision of a physician. **Capitation** is a method of payment for health services in which the institutional provider is paid a fixed amount for each person served in a set period of time (often one year). Under this system, a fixed annual fee may vary by such factors as age or sex of the person, but not the number of times that person utilizes the health care system.

As an example, assume that Medical Center "X" receives \$500 per year to provide all required care for a 25 year-old male. If that 25 year-old male remains healthy and requires only an annual physical and immunizations, much of the \$500 fee is kept by Medical Center "X" as profit. However, if that same 25 year-old male suffers a serious illness or injury, he may need many clinic visits, special tests, hospitalizations and prescriptions. Medical Center "X" will still receive \$500 to cover the cost of all the care the patient received. Under capitation, health care systems benefit by keeping patients healthy and preventing disease, rather than paying the costs for treating disease. That is why **Health Promotion** has enjoyed greater popularity in recent years; helping people stay healthy by educating them about a healthy lifestyle and encouraging them to avoid health risks is not only the "right thing" to do, it is cost effective as well.

Because resources (health care dollars, personnel) are limited, it is very important to use these resources wisely and for the greatest good for beneficiaries. One way to accomplish this is to track usage of services and focus resources where they are most needed. The Hospital Corpsman often plays a role in tracking by gathering data regarding quantity and type of services utilized in his/her area each day. Typically this is accomplished by entering appointments, admissions, and services performed into a computer program, then compiling the data at the end of each day. The **Composite Healthcare Computer System (CHCS)** is the computer system frequently used at Naval Hospitals and clinics for this purpose. Training on data entry and retrieval will be provided by the medical facility that utilizes the system.

Lesson 1.24

Managed Care Worksheet

1. Managed Care helps to _____ the rising costs of health care.
2. Managed Care can help expand access to care, and make health care more available to patients.
 - a. True
 - b. False
3. Military medical _____ are people who are eligible for medical benefits from the Department of Defense (DOD).
4. The DOD managed care program is called _____.
5. All active duty members are enrolled in TRICARE _____.
6. Under the TRICARE _____ option, care is provided by civilian facilities within an authorized provider network and cost shares for treatment are less to enrollees than the TRICARE Standard option.
7. The Primary care manager (PCM) is the patient's principal provider for routine medical needs.
 - a. True
 - b. False
8. The PCM is usually a physician or physician group, but can also be a nurse practitioner, a physician assistant or independent duty corpsman practicing under the supervision of a physician.
 - a. True
 - b. False
9. _____ is a method of payment for health services in which the institutional provider is paid a fixed amount for each person served in a set period time.
10. The _____ is the computer system frequently used at Naval Hospitals and clinics to enter appointments/admissions/ or services .

NOTES/COMMENTS

Lesson 1.25

Health Promotion Programs

Terminal Objective:

- 1.25 List the concepts and principles of the Navy's Health Promotion Program.

Enabling Objectives:

- 1.25.1 State the rationale for the Navy's Health Promotion Program.
- 1.25.2 State the elements of the Navy's Health Promotion Program.
- 1.25.3 State the duties and responsibilities of selected positions to implement the Navy's Health Promotion Program.
- 1.25.4 State the benefits of the Navy's Health Promotion Program.

HOMEWORK:

1. Reading Assignment: Health Promotion Programs Information Sheet
2. Written Assignment: Complete Worksheet 1.25

Health Promotion Programs Information Sheet

INTRODUCTION

Work performance is maximized through implementation of a program to provide each staff member the opportunity to assess his or her health status, become knowledgeable of healthy lifestyle habits, and establish behaviors, which improve and protect health. When applied, health promotion principles foster physical and emotional well-being. Positive lifestyle and behavioral changes can result in better health, enhanced quality of life, and improved combat readiness.

It is estimated that 50% of all illness and deaths relate directly to unhealthy lifestyle choices, including: poor diet, alcohol abuse, smoking, unmanaged stress, and lack of exercise.

In 1992, the Chief of Naval Operations established a comprehensive Health Promotion program and issued implementing directives. The Navy Environmental Health Center (NEHC) administers the program for the Navy. The USN and all Navy personnel share a joint responsibility to maintain an optimal state of health and well being. Health Promotions is a combined program consisting of the following: physical fitness and sports, tobacco use prevention and cessation, nutrition education and weight/fat control, back injury prevention, early identification and control of Hypertension (HTN), stress management, male and female health awareness, immunizations, cancer awareness (breast and testicular), and spirituality.

The United States Surgeon General has stated that smoking is the single MOST PREVENTABLE cause of death in our society. Tobacco use, IN ANY FORM, is addictive. Oral tobacco use causes oral cancer and gum disease.

Tobacco use is responsible for nearly one in five deaths in the United States. Based on data from the American Cancer Society's Cancer Prevention Study II, it is estimated that 430,700 US deaths per year were attributable to smoking during 1990-1994. Since 1987, more women have died each year from lung cancer than breast cancer, which was the major cause of cancer death in women for over 40 years. Approximately half of all continuing smokers die prematurely from smoking. Of these, approximately half die in middle age (35-69).

Lung cancer mortality rates are about 23 times higher for current male smokers and 13 times higher for current female smokers compared to lifelong never-smokers. In addition to being responsible for 87% of lung cancers, smoking is also associated with cancers of the mouth, pharynx, larynx, esophagus, pancreas, uterus, cervix, kidney, and bladder. Smoking accounts for at least 30% of all cancer deaths, is a major cause of heart disease, and is associated with conditions ranging from colds and gastric ulcers to chronic bronchitis, emphysema, and cerebrovascular disease.

From 1991 to 1997, the prevalence of cigarette smoking among high school students increased. More than one third of high school students are current smokers.

The US Navy provides programs and initiatives for substance abuse prevention and addiction, known as the Right Spirit Campaign.

According to insurance statistics, alcohol is a contributing factor in:

- a. 20% of all falls
- b. 20% of accidental asphyxiation
- c. 25% of deaths attributed to choking on food
- d. 50% of all fatal auto accidents

The best means to treat alcohol abuse is early intervention. The US Navy is committed to preventing substance abuse and addiction, offering drug and alcohol rehabilitation.

Physical fitness and sports: The USN provides ample opportunities to establish healthy and active lifestyles. The CNO has directed that all Navy personnel are to perform at least 30 minutes of exercise at least three times each week. Navy commands are to allow time during the workday, to the extent possible, while still accomplishing the mission. These opportunities provide for maintenance of physical fitness and body fat. Morale, Welfare, and Recreation facilities are available at many bases and commands.

Tobacco use prevention and cessation: US Navy policy supports abstinence/discourages tobacco use. The Navy is committed to providing a healthy, unpolluted working and living environment for all personnel. The Navy provides smoking cessation assistance for service-members who wish assistance. This includes information, intensive training programs, and medical assistance when appropriate. US Navy policy does not prohibit tobacco use. Individual commands may set policies within the guidelines established in SECNAV and OPNAV Instructions. This includes restricting the times and places that smoking is permitted. Conflicts between smoker and non-smoker rights are resolved on the side of the non-smoker.

Nutrition education and weight/fat control: US Navy policy includes a comprehensive weight/fat control and nutrition programs. All personnel are expected to maintain optimal levels of nutritional health and body composition. Medical Department personnel and others

conduct nutrition education and weight/fat control education classes.

Stress management and suicide prevention: The Navy provides assistance in developing adaptive and coping stress skills. Commands have individuals assigned as psychiatric/mental health liaisons to assist Sailors who want to learn how to develop skills to handle the stresses in an active duty career.

Hypertension (HTN) screening, education, and control: The Navy offers early hypertension screening. Commands provide information and education on the factors that contribute to hypertension, including: poor diet, lack of exercise and medications. Individuals who experience significant hypertension are referred to medical care.

Back injury prevention: Each year, numerous Sailors lose productive work time due to back injuries. The Navy has established education and training programs to reduce back pain and injuries. The training programs teach personnel: correct body posture, body mechanics, lifting techniques, and how to maintain a safe work environment.

Duties and Responsibilities

The Chief, Naval Education and Training (CNET) is responsible to provide training in Health Promotions elements to navy personnel. CNET has established a policy that prohibits the use of tobacco products by staff in the presence of trainees at initial training points throughout the USN.

The Chief, Bureau of Medicine and Surgery (Chief, BUMED) is responsible to:

- a. Provide technical assistance in support of the medical aspects of the Health Promotion Program.
- b. Ensure the appointment of Health Promotion Officers at all commands.

- c. Serve as a major source of support for the Health Promotion Program at all echelons.

Commanding Officers of Naval activities are responsible to provide:

- a. Alcohol and drug abuse counseling at all levels.
- b. Aggressively support Health Promotions through personal example and active participation.
- c. Promote a smoke free work environment.
- d. Ensure food service personnel plan menus with healthy food choices.
- e. Aid in stress management by providing availability of stress reduction program.
- f. Support health fairs and activities related to hypertension screening.
- g. Report and monitor all lost workdays related to back injuries.

Hospital Corpsmen support the Commanding Officer and directly implement many aspects of the Navy's Health Promotion programs by:

- a. Serving as personal advocates/examples of physical fitness.
- b. Providing resource for referrals to various Health Promotion programs.
- c. Teaching shipmates and patients Health Promotion classes.

Benefits of Health Promotion

Healthy staff members enhance command morale and quality of life. Unit readiness increases with increased physical and emotional fitness. Healthy lifestyles lead to:

- a. Increased job satisfaction,

b. Prevention of health related problems

c. Increase productivity.

d. Increased morale.

e. Decrease risk of disease.

f. Decrease risk of injury.

g. Decrease health care costs.

Lesson 1.25

Health Promotion Programs Worksheet

1. Health Promotions is a directive from _____.
2. Over 50% of all deaths and illnesses relate directly to unhealthy lifestyle habits.
 - a. True b. False
3. List three programs that fall under the Health Promotion Program:
 - a. _____
 - b. _____
 - c. _____
4. The Surgeon General has stated that the single most preventable cause of death in our society is _____.
5. The United States Navy prohibits tobacco use.
 - a. True b. False
6. It is the responsibility of _____ to ensure the appointments of Health Promotion Officers at all commands.
7. List three duties/responsibilities of the Commanding Officers for the Navy's Health Promotion Program.
 - a. _____
 - b. _____
 - c. _____
8. It is the HM's job to teach shipmates and patients the basics of Health Promotion.
 - a. True b. False
9. List three benefits of the Navy's Health Promotion Program:
 - a. _____
 - b. _____
 - c. _____

10. Healthy lifestyles lead to increased job satisfaction.

- a. True
- b. False

Lesson 2.11

Behavioral Emergencies

Terminal Objective:

2.11 State the emergency medical care for behavioral emergencies.

Enabling Objectives:

2.11.01 Define behavior, stress and behavioral emergency.

2.11.02 List the assessment of, and emergency medical care for, behavioral emergencies.

2.11.03 State factors and causes that may result in a change in the patient's behavior.

2.11.04 List various reasons for psychological crises.

2.11.05 List the characteristics of an individual's behavior which suggest that the patient is at risk for suicide.

2.11.06 List risk factors associated with suicide.

2.11.07 List emergency medical care for behavioral emergencies.

2.11.08 State general methods used to modify your behavior toward the patient with a behavioral emergency.

2.11.09 State the special considerations for assessing a patient with behavioral problems.

2.11.10 State the assessment of the aggressive or hostile patient who is at risk for behavioral emergencies.

2.11.11 List methods used to calm behavioral emergency patients.

2.11.12 List the procedure for restraining patients with behavioral emergencies.

2.11.13 State the special medical/legal considerations for managing behavioral emergencies.

2.11.14 List psychological responses to combat.

2.11.15 State the principles of and initial emergency medical care for treating combat stress.

HOMEWORK:

1. Reading Assignment:
 - a. Emergency Care, Ninth Edition: Chapter 23, pp. 450-461.
 - b. Behavioral Emergencies Information Sheet
2. Written Assignment: Complete Worksheet 2.12

Behavioral Emergencies Information Sheet

INTRODUCTION

The combat environment is one of the most stressful that one can endure. The threat of being injured or killed, in addition to the physical, psychological, and emotional hardships brought on by combat takes a toll on both mind and body. J. O. Brende and E. R. Parson quoted a Vietnam veteran in their book Vietnam Veterans, the Road to Recovery, as saying, "You're up for hours, or even days. Sometimes lying face down in the dirt, trying to keep from getting your head from being blown off while the machine gun is strafing the ground next to you and over your head... the noise from rockets and artillery is so damn loud you can't hear a person yelling next to you. You're scared you're going to die but it's so unbearable that you'd die to get it over with... and you're scared of that, too. When a buddy is killed, the grief is overwhelming, but you learn not to break down and cry or even admit to anyone you might be afraid for fear of being considered less than a man."

While historians have identified combat related symptoms of stress as far back as the Civil War, it was not until World War I that medical personnel began to identify and treat battle stress casualties. At that time, it was felt that the symptoms displayed were a result of physiologic danger. Over the years, however, psychological reactions to combat have been studied extensively, resulting in the development of numerous theories to explain the origins of such stress. Labels such as

Battle Exhaustion, Battle Fatigue, War Neurosis, and Shell Shock were applied, and various methods of treatment were tested.

Today, in a relatively peaceful world, the emphasis is on the psychological aftermath of war. In 1980, the American Psychological Association adopted the diagnosis of Post-traumatic Stress Disorder (PTSD) after health care personnel noted frequent emotional disturbances among Vietnam veterans. PTSD includes a set of emotional disturbances related to some past traumatic event. More recently, PTSD has been shown to relate to the psychological responses following events unrelated to battle, including rape, abuse, or natural and man-made disasters such as earthquakes and plane crashes.

DEFINITIONS

Behavior is the manner in which a person acts or performs. Any or all activities of a person, including physical and mental activity are aspects of behavior.

Behavioral emergency is a situation where the patient exhibits abnormal behavior that is unacceptable or intolerable to the patient, family or community.

Stress is the sum of biological reactions to any adverse stimulus that tends to disturb the body's homeostasis.

A **stressor** is something, which causes stress. This can be an event, a situation, or an individual.

Combat stress reaction is a psychological reaction encompassing the physical and emotional stresses experienced in combat.

RESPONSES TO STRESS

Stress occurs frequently in modern society. Hospital corpsmen often encounter stress in themselves or others due to their frequent contact with illness and injury. Typical reactions to stress in response to illness or injury involve the display of emotions such as fear, grief, and anger. These reactions may be manifested psychologically or physically.

Psychological responses to stress include irritability with others, including friends and family. Feeling of helplessness may occur when they are dependant on others to resolve a problem. Anxiety over loss of life or limb, resentment, suspiciousness, or depression are other notable responses.

Physiological responses may include muscular tension, which may increase with exhaustion, and is characterized by headaches, the inability to relax, and cramps. You may see people with shaking and tremors. Mild shaking may appear and disappear rapidly as a normal reaction to danger. Marked or violent shaking is sometimes incapacitating. Such pronounced shaking may persist after the cause has ceased.

Perspiration, either mild or heavy (even to the sensation of chills), is a normal part of the experience of stress. Other body systems react as well. The digestive and urinary systems may show reactions which include nausea and vomiting, loss of appetite, acute abdominal pain, urinary frequency or incontinence, or the inability to control bowel functions. The circulatory and respiratory systems reactions show in heart palpitations, elevated blood pressure, tachycardia, chest pain, chest pressure, and hyperventilation.

Stress may produce sleep disturbances of several types. Some people may have trouble falling asleep, even when the situation permits sleep. Nightmares (or terror dreams), restless

sleep, and excessive sleep are some possible responses to stress which change sleep habits.

The endocrine system has a strong connection to stress reactions. Hyperalertness as part of the fight or flight response puts the senses on alert to possible threats and danger. Signals from the brain to the body release chemicals that arouse various body systems, making the body ready to fight or take flight.

In addition, startle reactions are seen in the form of involuntary self-protective motor responses to minor external stimuli. Reactions include leaping, jerking, jumping, and cringing, often after relatively harmless events.

PSYCHOLOGICAL RESPONSES TO COMBAT

Fear is an emotional response to real danger. In combat, it is reasonable to have a fear of death, pain, injury, or mutilation. People, in general believe that it (death, etc.) will happen to someone else, or that they will not be harmed. After seeing peers wounded or killed, however, they lose the feeling that they are invulnerable.

Others see the combat environment as overwhelming and have a fear of incapacitation. The individual is afraid of not being able to perform his/her job and at the same time, is afraid of exhibiting fear. Individuals believe that they will lose face with their peers if they show fear.

Panic is the pathological counterpoint to normal fear. It involves a temporary major disorganization of thinking and loss of control.

Anxiety is an expectation of danger, which involves apprehension, uncertainty, and insecurity. Fear causes anxiety. Anxiety may begin when an individual has guilt feelings after surviving an incident, which killed a buddy.

Noise sensitivity is an abnormal nervous reaction to noise, which does not represent a threat.

Sleeping difficulty is a normal reaction resulting from tension, the need to remain alert, lack of comfort, and the presence of noises.

Apathetic tendency is having little or no feeling of emotion. This results in some decrease in drive, flow of speech, initiative, readiness to undertake new tasks, and a decreased feeling of well-being. Apathetic tendency may extend well beyond the period of battle stress.

Irritability is a usual characteristic of someone subjected to long, continuous battle. External manifestations are shown as overreaction to everyday comments or incidents. There may also be flare-ups with profanity and tears in response to relatively minor frustrations. It is possible that explosions of aggressive behavior (violence) may occur with little or no provocation.

Resentment is a normal response for the individual who has lost close friends. This may also be noted in those who have faced danger. Resentment is particularly strong where there is shirking of duty or discrimination against the individual.

Depression is a psychological condition manifested by a low level of functioning. It is disclosed in feelings of sadness, despair, hopelessness, dejection, discouragement, self-condemnation, and/or eating or sleeping disorders. Depression may develop during a break in combat or as post-combat behavior.

Substance abuse is the use of drugs or alcohol as a means of escaping stress. The individual is less able to adapt to the tremendous stress placed on them during combat because natural coping mechanisms are altered.

TREATMENT OF COMBAT STRESS

There are three principles of treatment for combat stress: proximity, immediacy, and expectancy (PIE). Treatment given according to these guidelines has been shown to avoid development of long term psychological disabilities in 80-90% of psychological reaction

casualties. Later psychological problems are also reduced by the PIE principles.

Proximity means that you should treat the patient as close to their area of operation as practical. Treatment provided in this manner increases the potential for full recovery by reducing the suggestion that the individual may have a serious disability. The need for evacuation is usually avoided when combatants are treated in proximity to their unit. Individual morale and a sense of group identity is maintained.

Immediacy means that initial treatment (or psychological first aid) is applied as soon as possible to limit later effects.

Expectancy refers to the reassurance that the individual is given, especially that they are expected to return to full duty. Combatants are instilled with the expectation that they will have a rapid recovery after a brief period of rest. Reinforce the idea that they are still needed and still a part of the combat team. Avoid any suggestion that the person has an incurable mental illness.

Initial treatment procedures are based on proximity, immediacy, and expectancy. Time and the tactical situation dictate the treatment you can provide. Provide a place for the individual to rest. At least 4 hours of rest in a comparatively secure area, and food, (if available), are highly recommended.

Individuals need an opportunity to ventilate and to express pent-up thoughts and feelings. Problems and fears seem more tangible and manageable when put into words. If possible, involve peers in care as a source of support and strength. Avoid arguments and allow the individual to express feelings that are usually considered unacceptable.

A decision will be made regarding the person's disposition. If the reactions are disruptive or persistently incapacitating, and the tactical situation permits, evacuate. If the reactions are not disruptive and the individual is able to perform his/her job, return to duty.

Returning the individual to his/her original unit and original job is the best mental health assistance that can be provided. Put another way, returning the individual to their unit is the treatment of choice. The unit can provide group support by virtue of common experiences and emotions.

FURTHER RESPONSIBILITIES

The primary means of combating psychological casualties is prevention, which can be achieved through facilitating group cohesiveness. A cohesive group will encourage the sharing of the combat experience, reducing the potential for psychological casualties. The corpsman should provide opportunities for individuals to confide their feelings and fears. By modeling coping skills, you will demonstrate how to prevent and deal with combat stress reactions. Evacuate personnel only when necessary for group cohesiveness and morale. Keep your seniors informed of the status of potential, suspected, or real stress reactions.

STRESS SYNDROME IN MEDICAL PROFESSIONALS

The health care professionals work in a high stress occupation. Life and death crises occur daily for some individuals. At times, there is little to be done to alter the effects or outcome of serious illness or injury. Care givers may be very involved with patients and their problems. While it is natural for corpsmen to be caring and compassionate, excessive emotional involvement can interfere with a provider's ability to carry out emergency care effectively and objectively. It is a challenge to balance genuine concern and emotional detachment.

Corpsmen are vulnerable to the stresses of the health care profession. It is helpful for you to recognize symptoms of stress in yourself and others. These signs may not be obvious at first, and may not be present all of the time.

The following may indicate the presence of stress: irritability, lack of enthusiasm, chronic

fatigue, feeling unappreciated, having nightmares, increased alcohol or drug use, a decrease in social activities, an attitude of wanting to quit (even to the point of going U/A), changes in appetite, physiological responses (such as headache, ulcers, muscle aches, and the inability to concentrate), rigidity in thinking, and avoidance of change.

Fortunately, there are steps that you can take to relieve the symptoms of stress. Remember that early recognition and treatment of stress makes for easier, faster solutions. Try the following approaches: develop peer support and talk with co-workers (many will have had similar experiences.) Discussing the situation may help to resolve the problem.

Develop achievable objectives. It is not reasonable to expect that stress will just go away or be fixed by a one time answer. Make a plan that has small steps, and take them one at a time. Change the environment to get away from the specific stressors. Taking leave may help.

Show and accept emotional feelings. If symptoms persist, seek counseling or other professional help. From time to time, the corpsman may have to assess the appropriateness of their career choice. It may be necessary to make a decision to stay or leave the medical field.

Continuing education is also helpful in renewing confidence in your ability and in gaining new skills, (including coping skills.) Share your skills with others, as in teaching CPR. Family members need to know that you need time to wind down after a stressful day. Let them know what you do, and involve them in it.

Above all, maintain a sense of humor. Laugh when appropriate, it is good medicine.

NOTES/COMMENTS

Lesson 2.11

Behavioral Emergencies Worksheet

1. _____ is the manner in which a person acts or performs.
2. Low blood sugar can cause a behavioral emergency.
 - a. True
 - b. False
3. Scene size-up of the emotional emergency patient follows patient assessment.
 - a. True
 - b. False
4. A 16-year-old girl recently arrested and who takes drugs may be a high risk for suicide.
 - a. True
 - b. False
5. Emergency treatment of a hostile patient may never go beyond the initial assessment phase.
 - a. True
 - b. False
6. You should play along with visual or auditory disturbances a behavioral emergency patient might describe.
 - a. True
 - b. False
7. In most localities and with the family's permission, it is permissible to restrain a psychological emergency patient against his or her will.
 - a. True
 - b. False
8. Once you decide to restrain a patient, you should respond slowly so the patient is not upset further.
 - a. True
 - b. False
9. Your state law permits you to transport patients without consent. This may be permissible after contacting medical control and if in your medical judgement the patient is a(n) _____ to himself or others.
10. When restraining a hostile patient, one corpsman holds onto the patient's upper torso, while a second corpsman holds onto the lower torso.
 - a. True
 - b. False

NOTES /COMMENTS

Lesson 2.12

Obstetrics and Gynecology

Terminal Objective:

2.12 State the emergency medical care for obstetric and gynecological emergencies.

Enabling Objectives:

- 2.12.01 Define terms related to obstetrics, labor, and gynecology.
- 2.12.02 List the items contained in an obstetrical kit and how they are used.
- 2.12.03 List pre-delivery considerations, including indications of an imminent delivery.
- 2.12.04 State the procedure for pre-delivery preparation of the mother.
- 2.12.05 List the procedure for a normal delivery, including the need for body substance isolation.
- 2.12.06 List the steps in post-delivery emergency medical care of the mother.
- 2.12.07 State the initial care procedure for a newborn, including resuscitation.
- 2.12.08 List emergency medical care for an abnormal delivery, including multiple births, meconium, and a premature baby.
- 2.12.09 State the emergency medical care protocol for gynecological emergencies.
- 2.12.10 List selected pre-delivery emergencies.
- 2.12.11 State post-delivery care for the mother.
- 2.12.12 State emergency medical care for abnormal delivery, including: vaginal bleeding, breech birth, prolapsed cord, and limb presentation.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition, Chapter 24, pp. 462-489.
2. Written Assignment: Complete Worksheet 2.13.

NOTES/COMMENTS

Lesson 2.12

Obstetrics and Gynecology Worksheet

1. The developing baby is called a(n)_____.
2. During pregnancy, attached to the wall of the uterus is an organ called the _____.
3. The nine months of pregnancy are divided into three month _____.
4. A breech birth occurs when the presenting part of the baby is the head.
 - a. True
 - b. False
5. The third stage of delivery occurs when baby enters the birth canal and is born.
 - a. True
 - b. False
6. Delivery of the baby may be imminent when contractions last 30 seconds to one minute and are 2 to 3 minutes apart.
 - a. True
 - b. False
7. Assessment of the newborn includes heart rate, effort of breathing, movement, crying, and _____.
8. Neonatal resuscitation includes suctioning the mouth before the nostrils.
 - a. True
 - b. False
9. A newborn should begin breathing within _____seconds.
10. During a normal birth the infant must be breathing on its own before you clamp and cut the umbilical cord.
 - a. True
 - b. False
11. During an emergency delivery, transport the mother and baby to the hospital if the placenta does not deliver within _____ minutes.
12. The most common abnormal delivery is a limb presentation.
 - a. True
 - b. False

13. Emergency care for an abnormal delivery with limb presentation includes gently pulling on the limb or replacing the limb into the vagina.
- a. True b. False
14. A sign of fetal or maternal distress is the presence of meconium.
- a. True b. False
15. Premature infants are at a great risk of developing hypothermia.
- a. True b. False
16. The premature infant can be kept warm by wrapping in a blanket and then aluminum foil.
- a. True b. False
17. The main sign of the condition known as excessive prebirth bleeding is profuse vaginal bleeding.
- a. True b. False
18. _____ in pregnancy are usually associated with high blood pressure, swollen extremities, and tend to occur late in pregnancy.
19. Cramping abdominal pains, vaginal bleeding, and a noticeable discharge of tissue and blood during pregnancy may indicate a(n) _____.
20. A pregnant woman should be transported in the _____ position unless a back or neck injury is suspected.
- a. True b. False

Lesson 2.13

Infants and Children

Terminal Objective:

- 2.13 List the characteristics of infants and children, and the illnesses/injuries to which they are prone.

Enabling Objectives:

- 2.13.01 List the developmental characteristics of infants and children that effect emergency medical care.
- 2.13.02 List anatomic and physiologic characteristics of infants and children.
- 2.13.03 Differentiate between airway obstruction and respiratory disease in a pediatric patient.
- 2.13.04 State the emergency medical care for respiratory distress and respiratory failure.
- 2.13.05 Explain the rationale and state the guidelines for interacting with infant and child patients and their parents.
- 2.13.06 List the steps to assess a pediatric patient.
- 2.13.07 State the impact of fever, hypothermia, diarrhea, and vomiting in pediatric patients.
- 2.13.08 List the signs/symptoms and emergency medical care for seizures (including causes), altered mental status, poisoning, shock, near drowning, and sudden infant death syndrome.
- 2.13.09 List the common causes of pediatric trauma.
- 2.13.10 List patterns of injury to which pediatric patients are prone.
- 2.13.11 State the signs and symptoms of child abuse/neglect.
- 2.13.12 List normal and abnormal findings when assessing capillary refill in the infant and child patient.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition: Chapter 31, pp. 660-685.
2. Review: Emergency Care, Eighth Edition: Chapter 10 & 13
3. Written Assignment: Complete Worksheet 2.14

NOTES/COMMENTS

Lesson 2.13

Infants and Children Worksheet

1. Match each age span in column B with the correct term in column A.
 - a. Newborn and infant ___ 1. 6-12 years
 - b. Toddlers ___ 2. 3-6 years
 - c. Preschool ___ 3. Birth-1 year
 - d. School Age ___ 4. 12-18 years
 - e. Adolescent ___ 5. 1-3 years
2. A child's _____ is heavier relative to their body as compared to an adult.
3. Newborns are obligate _____ breathers.
4. Compared to adults, infants and children have a _____ volume of blood.
5. When opening a child's airway, it is important not to _____ the neck.
6. Flow-restricted, oxygen-powered ventilation devices are useful for providing ventilations to infants and children.
 - a. True b. False
7. One of the signs of shock is _____ capillary refill in children aged 5 or younger.
8. The usual order of the normal physical exam, or head-to-toe survey, may be reversed when examining an infant or small child.
 - a. True b. False
9. _____ and _____ are two illnesses that can cause airway difficulties in children..
10. A child with a fever should be cooled using rubbing alcohol.
 - a. True b. False
11. Febrile seizures are caused by a _____ _____ in temperature rather than the temperature itself.
12. Dehydration caused by vomiting and diarrhea may lead to life-threatening _____ in a pediatric patient.

13. Early signs of respiratory distress in a pediatric patient may include _____ flaring, use of _____ muscles, and a breathing rate greater than _____ per minute.
14. Patient care for the pediatric patient with an altered mental status includes administration of _____ concentration oxygen.
15. If a PASG is used on a pediatric shock patient, do not inflate the _____ compartment as this may compromise breathing.

Lesson 2.14

Bleeding and Shock

Terminal Objective:

2.14 Perform emergency medical care for bleeding and shock.

Enabling Objectives:

- 2.14.01 Define terms related to bleeding and shock.
- 2.14.02 List assessment considerations for bleeding.
- 2.14.03 List emergency medical care guidelines for controlling internal and external bleeding.
- 2.14.04 State the use of, and the procedure to apply, a tourniquet to control bleeding.
- 2.14.05 State the emergency medical care for bleeding from a head injury or nosebleed.
- 2.14.06 List mechanisms of injury when internal bleeding should be considered.
- 2.14.07 List the primary causes of shock.
- 2.14.08 State the major stages of shock and the urgent need to transport a patient who is bleeding and shows signs of shock.
- 2.14.09 List the signs and symptoms of shock.
- 2.14.10 Perform emergency medical care to control emergency bleeding.
- 2.14.11 Perform emergency medical care for shock.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition, Chapter 26, pg. 500-524.
2. Written Assignment: Complete Worksheet 2.15.

LABORATORY:

1. The laboratory for this lesson is Performance Checklist 2.15/16.

NOTES/COMMENTS

Lesson 2.14

Bleeding and Shock Worksheet

- Blood vessels that carry blood away from the heart are called _____, while those that carry blood back to the heart are called _____.
- Oxygen/carbon dioxide and nutrient/waste exchanges take place in the vessels called _____.
- Match the description of bleeding with the correct blood vessel.

a. Capillary _____	1. steady flow, heavy
b. Vein _____	2. oozing, slow
c. Artery _____	3. bright red, spurting
- Bleeding from the lower extremity may be controlled by applying pressure over the _____.
- The use of a tourniquet to control bleeding is a last resort.
 - True
 - False
- Bruising and a tender, rigid abdomen may be signs of _____ bleeding.
- The inability of the body to perfuse cells with oxygen and nutrients is called _____.
- _____ shock is caused by a low blood volume.
- Because the brain does not receive enough oxygen when a patient is in shock, the patient may experience _____ and _____ changes.
- A strong, slow pulse and deep, full respirations are early signs of shock.
 - True
 - False
- A drop in blood pressure is one of the last signs of shock.
 - True
 - False
- Shock must be considered and cared for early in children with bleeding or traumatic injury because they may maintain their blood pressure until more than _____ of their blood volume is gone.
- The term golden hour refers to the optimum limit of one hour between time of _____ and _____ at the hospital.
- An optimum time limit of ten minutes at the scene with a serious trauma patient is called the _____.

15. Emergency care steps for shock include maintaining a(n) _____ and assuring the adequacy of _____.
16. The PASG is usually indicated for bleeding in areas covered by the garment, such as _____ injury and some _____ trauma.
17. If there are no signs of injury to the legs, hips, or pelvis, you may elevate the legs of a shock patient _____ to _____ inches.
18. It is important to maintain the patient's body heat when treating for shock.
 - a. True
 - b. False

Lesson 2.15

Soft Tissue Injuries

Terminal Objective:

2.15 Perform emergency medical care for soft tissue injuries.

Enabling Objectives:

- 2.15.01 List the layers of the skin, and their functions.
- 2.15.02 List the classifications of soft tissue injuries.
- 2.15.03 List the types of soft tissue injuries.
- 2.15.04 List the signs and symptoms of closed and open soft tissue injuries.
- 2.15.05 State the emergency medical care for open and closed soft tissue injuries, including the need for body substance isolation.
- 2.15.06 State emergency medical care considerations for a trauma injury to the chest.
- 2.15.07 State the emergency medical care for an open chest wound.
- 2.15.08 State emergency medical care considerations for a trauma injury to the abdomen.
- 2.15.09 State the emergency medical care for abdominal injuries.
- 2.15.10 List mechanisms of injury for projectiles.
- 2.15.11 List the classifications and characteristics for the depths of a burn.
- 2.15.12 Label a diagram using the Rule of Nines for burns.
- 2.15.13 List the classifications and characteristics for the severity of a burn.
- 2.15.14 State the emergency medical care for thermal burns.
- 2.15.15 State the emergency medical care for chemical burns.
- 2.15.16 State the emergency medical care for electrical burns.
- 2.15.17 List the functions, purposes and guidelines for applying dressings and bandaging.
- 2.15.18 Apply dressings and bandages.

- 2.15.19 List the effects of improperly applied dressings, splints and tourniquets.
- 2.15.20 Perform emergency medical care for a patient with an open chest wound.
- 2.15.21 Perform emergency medical care of a patient with an open abdominal wound.
- 2.15.22 Perform emergency medical care of a patient with an impaled object.
- 2.15.23 Perform emergency medical care of a patient with an amputation, including care of the amputated part.
- 2.15.24 Perform basic emergency care for burns.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition: Chapter 27, pp.524-565.
2. Written Assignment: Complete Worksheet 2.16.

LABORATORY:

1. The laboratory for this lesson is Performance Checklist 2.15/16.

Lesson 2.15

Soft Tissue Injuries Worksheet

1. Skin, fatty tissues, and muscles are considered _____ tissues.
2. Two functions of the skin are _____ and _____.
3. An internal injury where there is no open pathway from the outside to the injured site is called a(n) _____ wound.
4. A collection of blood in the tissues of an injury site is called a(n) _____.
5. After taking appropriate BSI precautions, your next emergency care steps for a patient with a closed wound are to manage _____, _____ and _____.
6. If a patient's fractured leg bone end tears outward through the skin, this is considered a(n) _____ wound.
7. Simple scrapes and scratches are called _____.
8. _____ is the term used for any cut which may have smooth or jagged edges.
9. If fingers, toes, hands, feet, or limbs are completely cut through or torn off, the injury is called a(n) _____.
10. A(n) _____ is an injury in which a flap of skin or tissue is torn loose or pulled off.
11. An injury in which a sharp, pointed object passes through the skin is called a(n) _____.
12. When caring for a patient with a puncture wound involving an impaled object, it is important to remove the object prior to bandaging the wound.
 - a. True
 - b. False
13. When transporting an amputated part to the hospital with a patient, you should place the amputated part in a plastic bag, and not directly in water.
 - a. True
 - b. False
14. An injury that opens the chest cavity to the atmosphere is called a(n) _____ wound.
15. If a patient with a closed abdominal injury becomes restless and develops pale, cool, clammy skin and rapid pulse and respiration, the patient may be developing _____.
16. An organ protruding through an open abdominal wound is called a(n) _____.
17. A burn in which all the layers of the skin are damaged is called a _____ burn, or a _____ degree burn.

18. Two ways to estimate the extent of a burned area on a patient is the Rule of _____ and the Rule of _____.

19. Treatment for a chemical burn to the eyes is immediate flushing with _____.

20. List three checks performed when doing circulation/neurologic checks:

Lesson 2.16

Chemical, Biological, Radiological, Nuclear and High Yield Explosives

Terminal Objective:

- 2.16 State emergency medical care for chemical, biological, and radiological casualties, and hazardous material situations.

Enabling Objectives:

- 2.16.01 List the classifications of chemical, biological, and radiation agents.
- 2.16.02 List the characteristics of chemical agents.
- 2.16.03 List the signs and symptoms of a biological agent outbreak.
- 2.16.04 List the characteristics of a radiological dispersion device (dirty bomb).
- 2.16.05 List the signs and symptoms of radiation exposure, high yield explosives and nuclear blast.
- 2.16.06 State how exposure affects the severity of radiation burns.
- 2.16.07 List the protective equipment used for chemical, biological and radiological agents.
- 2.16.08 State the emergency medical care for a contaminated patient.
- 2.16.09 List commonly encountered hazardous materials and the hazards they pose.

HOMEWORK:

1. Reading Assignment:
 - a. Emergency Care, Ninth Edition: Chapter 32 pp. 740-762.
 - b. Chemical, Biological and Radiological Warfare Information Sheet.
2. Written Assignment: Complete Worksheet 2.16.

CHEMICAL BIOLOGICAL AND RADIOLOGICAL WARFARE INFORMATION SHEET

Introduction

The first large scale use of chemical agents and weapons appeared in the First World War when, in 1915 the Germans released chlorine gas against the Allied positions at Ypres, Belgium. Over 5,000 casualties resulted. There were other gas attacks by both combatant forces during World War I. It is well documented that approximately one-third of all American casualties in this conflict were due to chemical agents.

During the interval between WWI and WWII, the major powers continued to develop their capability for chemical warfare in spite of the Geneva Treaty ban. In isolated cases during the late 1930's, toxic chemical agents were used; however, they were not used during the WWII.

Toxic chemicals were not authorized for use in Korea or Vietnam. Defoliants and riot control agents were used to some degree of effectiveness in the jungles of Vietnam, in tunnels, and in perimeter clearing operations. Their toxicity is still being evaluated.

Naval vessels are in a unique situation concerning defense against toxic chemical agents. Because the agents can be released as liquids or clouds of vapor or aerosol, they can envelop a vessel and enter the hull through the ventilation system aboard ship. Therefore, extensive contamination may result from such an attack. Since the ship, in most instances, cannot be abandoned, it must be decontaminated, while the personnel continue manning it.

To indicate the presence of chemical, biological, or radiological agents symbols have been developed. (Figure 2.17.01 and Figure 2.17.02.)

CHEMICAL AGENTS

In any discussion of toxic chemical agents it is possible to consider them under several

classifications. The broadest classification is based on the three general physiologic effects produced, i.e., severe casualty, incapacitation, or harassment. Chemical agents are classified as lethal or nonlethal. They may further be classified as persistent or nonpersistent, depending on the length of time they retain their effectiveness after dissemination. The most convenient, medical classification of chemical agents, is by physiologic effect.

CASUALTY PRODUCING

Nerve agents - These agents produce their effect by interfering with transmission of nerve impulses in the parasympathetic autonomic nervous system.

Blister agents or Vesicants - Those agents which cause severe blistering of exposed skin.

Blood agents - Agents which interfere with oxygen transfer.

Choking agents -- Agents which irritate the bronchi and cause pulmonary edema.

INCAPACITANTS

Psychochemicals are the main group. They produce mental confusion and the inability to function normally.

HARASSING

These chemical agents are also called riot control agents and include:

Lacrimators -- chemicals which cause severe tearing and eye pain, but for a very short duration.

Sternutators -- agents which induce vomiting, of short duration.

Nerve Agents

Characteristically, nerve agents are odorless, almost colorless liquids, varying greatly in viscosity and volatility. They are moderately soluble unless strong alkali or chlorinating compounds are added. They are very effective solvents readily penetrating cloth either as a liquid or vapor. Other materials, including leather and wood, are fairly well penetrated. Butyl rubber and synthetics, such as polyesters, are much more resistant.

Nerve agents produce their effects by inhibiting the production of cholinesterase which increases acetylcholine in the body. Their reaction with cholinesterase is not reversible and consequently the effects of inhibition are prolonged until the body synthesizes new cholinesterase.

Signs and symptoms of exposure: Nerve agent intoxication can be readily identified by its characteristic signs and symptoms. If vapor exposure has occurred, the pupils will constrict, usually to a pinpoint; if the exposure has been through the skin, characteristic local twitching will occur. Other symptoms include runny nose, dyspnea, diarrhea and vomiting, convulsions, massive salivation, drowsiness, coma, unconsciousness, lack of muscular control, and respiratory paralysis.

Blister Agents

Blister agents, also called vesicants, exert their primary action on the skin, producing large and painful blisters that are incapacitating. Although vesicants are classified as nonlethal, high doses can cause death.

Mustard blister agents are particularly insidious because they do not manifest their symptoms for several hours after exposure. They attack the eyes, and respiratory tract as well as the skin. Further, there is no effective therapy for mustard once its effects become visible. Treatment is largely supportive, to relieve itching and pain and to prevent infection.

The part of the body most vulnerable to mustard gas is the eyes. Contamination insufficient to cause injury elsewhere may produce eye inflammation. Because the eye is the most sensitive part of the body, the first noticeable symptoms of mustard exposure will be pain and a gritty feeling in the eye, accompanied by spastic blinking of the eyelids and photophobia.

Blood Agents

Cyanide containing compounds are commonly referred to as blood agents. These blood agents are chemicals that are in a gaseous state at normal temperatures and pressures. They are systemic poisons and casualty producing agents that interfere with vital enzyme systems of the body. They can cause death in a very short time after exposure by interfering with oxygen transfer in the blood. Although very deadly, they are nonpersistent agents. They often have an almond-like odor.

The key to successful cyanide therapy is speed; cyanide acts rapidly on an essential enzyme system. The antidotes act rapidly to reverse this action. If the specific antidote and artificial respiration are given soon enough, the chance of survival is greatly enhanced.

Choking or Lung Agents

The toxicity of choking agents, also known as lung agents, is due to their effect on lung tissue; they cause extensive destruction of alveolar tissue, resulting in severe pulmonary edema. This agent often smells like new mown hay. The symptoms of choking agents often do not appear for 2-6 hours after exposure. They should be treated symptomatically.

Signs and symptoms include:

1. Watering of the eyes, coughing, and a feeling of tightness in the chest.
2. Rapid, shallow, and labored breathing
3. Painful cough
4. Cyanosis
5. Frothy sputum
6. Leadened, clammy skin
7. Rapid, feeble pulse

8. Low blood pressure
9. Shock may develop, followed by death.

INCAPACITATING AGENTS

Incapacitating agents, often referred to as psychochemical agents, prevent an individual from temporarily carrying out assigned actions. These agents can be administered covertly by contaminating food or water, or they may be released as aerosols. Some of the characteristics of incapacitating agents are:

1. Highly potent, i.e., an extremely low dose is effective and logistically feasible.
2. Produce an effect by altering or disrupting the higher regulatory activity of the central nervous system.
3. Have a duration of action of hours or days, rather than a momentary or transient action.
4. Produce no permanent injury.

Symptoms: The first symptoms appear in 30 minutes to several hours and may persist for several days. Abnormal, inappropriate behavior may be the only sign of exposure. Those affected may make irrational statements and have delusions or hallucinations. In some instances the patient may complain of dizziness, muscular incoordination, dry mouth, and difficulty swallowing.

HARASSING AGENTS

Harassing agents are also known as Riot Control Agents, is the collective term used to describe a divergent collection of chemical compounds, which have similar characteristics. They are relatively nontoxic compounds, which in very low concentrations produce an immediate but temporary effect. Generally, no therapy is required; removal from the contaminated environment is sufficient for recovery in a short time. Harassing agents are either lacrimators or sternutators:

LACRIMATORS - or tear gases are essentially local irritants that act primarily on the eyes. In high concentrations they irritate the respiratory tract and the skin. These agents are used to harass enemy personnel or to discourage riot action.

STERNUTATORS - or vomiting agents produce strong pepperlike irritation in the upper respiratory tract with irritation of the eyes and lacrimation. They cause violent uncontrollable sneezing, coughing, nausea, vomiting, and a general feeling of malaise. They are used as training and riot control agents. They are dispersed as aerosols and produce an effect by inhalation or by direct action on the eyes.

BIOLOGICAL AGENTS

Biologic agents have never been used as part of a weapons system. There is doubt about their tactical effectiveness. However, as a strategic device, as a covert weapon, biological agents are ideally suited. Throughout the history of warfare, disease has been as effective as combat in causing casualties. Recall the plagues that swept Europe during the Middle Ages, or, more frequently, the influenza outbreaks of 1918, 1958 and 1968. Any epidemic can totally disrupt normal functioning. Imagine being able to cause an epidemic when and where you choose and you have some idea of the potential military strategic usefulness of biological warfare. The importance of planning and training for defense against biological agents cannot be underestimated. Some of the characteristics that make biological agents such a formidable class of weapon, include the following:

Biological agents can be in the form of virus, bacteria, rickettsiae, fungi, and animal parasites. Personnel may not be similarly affected, even though exposed to the same dosage of biologic agents. Some may escape the disease entirely or have a very mild attack while others will become seriously ill.

Biological weapons do not destroy material; they are anti-personnel weapons in the truest sense. They are effective against buildings, fortifications, ships and aircraft. They penetrate

without physical damage to the facilities, producing personnel casualties.

Biological weapons are particularly adaptable for use against large groups of people. Densely populated areas having transportation or manufacturing facilities that must be preserved for economic or political reasons are ideal targets. Large number of casualties can be produced with minimal damage to property.

DETECTION OF BIOLOGIC AGENTS

The presence of biological agent cannot be perceived by the physical senses, so there must be a very close look at the environment to determine if biologic agents have been deployed. The classic signs indicating that an area has been contaminated by a biological agent are large numbers of dead or sick-looking mammals or fish, and a large percentage of dead or dying foliage.

Since biologic agents cannot be detected by physical or mechanical means, the only option available to determine whether or not an area has been contaminated is to collect samples in the form of air, water, and dead animals. These samples are sent to laboratories for definitive testing in order to isolate the specific organism and establish a treatment plan. Biologic agents are treated the same as any acquired infection.

RADIOLOGICAL DISPERSION DEVICE (DIRTY BOMB)

A Radiological Dispersion Device (RRD), also known as a "Dirty Bomb", is conventional explosive, such as TNT, packaged with a radioactive material. It does have the combination of explosive destruction and radiation damage.

The primary purpose for using RRD are causing fear and panic, disrupting economic and social activity, causing low level radioactive contamination, and the unknown risk of long-term health effects.

Upon explosion of an RRD, radioactive material spreads similar to a dust cloud. It is carried by the wind, causing it to reach an area larger than the explosion. The long-term destructive force of the bomb

would be ionizing radiation from the radioactive material. Radiation exposure decreases with distance.

Most injuries will be caused by the conventional explosive rather than radioactive material. People very close to the blast could conceivably suffer radiation sickness and might require hospital care. People who get rid of contaminated clothes, shower, and evacuate the area of a small or medium blast should show no long-term effect.

RADIOLOGICAL WARFARE

The injuries to personnel resulting from a nuclear explosion may be divided into three broad classes:

1. Blast and Shock wave injuries
2. Burns (to skin and eyes)
3. Ionizing radiation effects

Apart from the ionizing radiation effects, most of the injuries suffered in a nuclear explosion will not differ greatly from those caused by ordinary high explosives or incendiary bombs. An important aspect of injuries in nuclear explosions is the combined effect, that is, a combination of all three types of injuries. For example, a person within the effective range of a weapon may suffer blast injury, burns and the effects of nuclear radiation. In this respect, radiation injury may be the complicating factor, since it is combined with injuries due to other sources.

BLAST AND SHOCK WAVE INJURIES

Injuries caused by blast can be divided into:

1. Primary (direct) blast injuries
2. Secondary (indirect) blast or mechanical injuries

Primary blast injuries are those that result from the direct action of the air shockwave on the human body. These injuries will be confined to a zone where fatal secondary blast and thermal damage may be anticipated. Therefore, most

injured personnel will not have severe injuries that result from the direct compressive effects of the blast wave.

Secondary blast injuries are caused by collapsing buildings and by timber and other debris flung about by the blast. Persons may also be hurled against stationary objects or thrown to the ground by high winds accompanying the explosions. The injuries sustained are thus similar to those due to a mechanical accident: Bruises, concussions, cuts, fractures and internal injuries. External wounds should be cleaned and bandaged but not closed unless directed by the Medical Officer.

BURNS

A weapon detonated as an air burst may produce more burn casualties than blast or ionizing radiation casualties. Skin burns due to a nuclear explosion can also be divided into two classes: Direct or indirect burns. Direct burns (usually called flash burns) are a result of thermal (infrared) radiation emanating from a nuclear explosion, while indirect burns result from fires caused by the explosion. Biologically, they are similar to any other burn and are treated in the same manner.

EYE BURNS

In addition to injuries of the skin, the eyes may also be affected by thermal radiation. If people are looking in the general direction of a nuclear detonation, they receive flash burns to the eyes, a blindness which may persist for 20 to 30 minutes.

A second and very serious type of eye injury may also occur. If people are looking directly at the fireball of a nuclear detonation, they may receive a retinal flash similar to the burn that occurs on exposed skin. Unfortunately, when the burn heals, the destroyed retinal tissue is replaced by scar tissue that has no light perception capability, and the patient will have scotomas, blind or partially blind areas in the visual field. In severe cases, the result may be permanent blindness. The effective range for eye injuries from the flash may extend for many miles when a

weapon is detonated as an air burst. This effective range is far greater at night when the pupils are dilated, thereby permitting a greater amount of light to enter the eye.

RADIATION INJURIES

Radioactivity may be defined as the spontaneous decomposition of an atom accompanied by emission of alpha or beta particles or gamma rays. The actual particles and rays involved in the production of radiation injuries are the alpha and beta particles, the neutron, and the gamma ray. These particles and rays produce their effect by changing the chemical compounds that make up the living cell into positive or negative particles. If enough of these particles or rays disrupt a sufficient number of molecules within the cell, the cell will not be able to carry on its normal functions, and dies.

Alpha particles are emitted from the nucleus of some radioactive elements and are large, both in size and electrical charge. These particles are rapidly stopped or absorbed by only a few inches of air, a sheet of paper, or the superficial skin. Thus alpha particles do not constitute a major external radiation hazard. However, because of their great ionization power, they constitute a serious hazard when taken into the body through ingestion, inhalation, or an open wound.

Beta particles are electrons of nuclear origin. The penetration ability of the beta particle is greater than the alpha particle, but will only penetrate a few millimeters of tissue and will most probably be shielded out by clothing. Therefore, beta particles, like alpha particles, do not constitute a serious external hazard; however, like alpha particles, they do constitute a serious internal hazard.

Neutrons are particles with no electrical charge and are emitted from the nucleus of the atom. These particles are heavy ionizing particles which can cause significant biological damage.

Gamma rays are electromagnetic waves having no mass or electrical charge. Biologically gamma rays are identical to X-rays of the same energy and frequency. Because they possess no

mass or electrical charge, they are the most penetrating form of radiation. Gamma rays and X-rays can be stopped by lead. Gamma rays cause severe cellular damage.

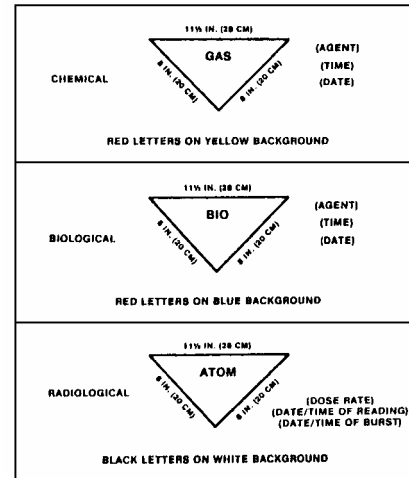
Neutron radiation has serious ionization effects. The action is similar to alpha radiation. Neutron radiation can penetrate all material. It is deadly to all living things.

PROTECTIVE EQUIPMENT

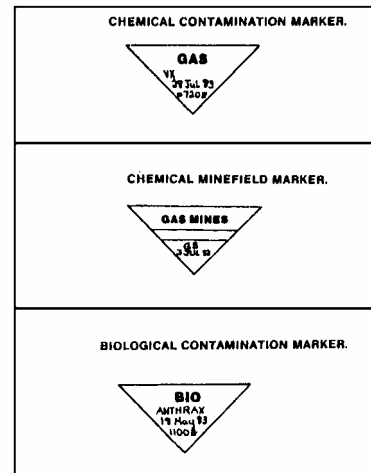
In the U.S. Navy, there are several classes of protective masks utilized, dependent on the operational environment. The prime chemical/biological mask is the MCU2/P. All chemical/biological protective masks are designed to provide protection to the eyes, face and respiratory tract. They only filter decontaminants from air, and they do not provide any protection against ammonia or carbon monoxide. They all share the same general limitation of not functioning in environments containing less than 18% oxygen content, Figure 2.17.03.

The chemical protective overgarment (field) is utilized to protect the torso, arms and legs of the wearer against chemical agents. The suit is limited in effectiveness because it is a single use item that cannot be decontaminated, reimpregnated or laundered. If worn over normal battle dress, the suits may cause heat stress casualties. The suit provides protection against chemical agents for 14 days after the package has been opened.

Another component of the protective system is the glove set for chemical protection. The gloves protect the hand and wrist of the wearer. The glove set consists of inner gloves of cotton which absorbs sweat when the outer heavy butyl rubber



**FIGURE 2.16.01
MARKERS FOR CHEMICAL
BIOLOGICAL, AND
RADIOLOGICAL
CONTAMINATION**



**FIGURE 2.16.02
MARKER EXAMPLES**

gloves are worn. When the glove set is worn in the contaminated environment, heavy leather gloves must be worn to prevent tearing the gloves if using tools or doing manual labor.

The next component of the protective system is the chemical protective overboots. The principle purpose of these boots is to provide protection of the ankles and feet of the wearer. These boots are composed of the same material as the glove set.

These boots, as well as the glove set, can be decontaminated and reused as long as they remain intact.

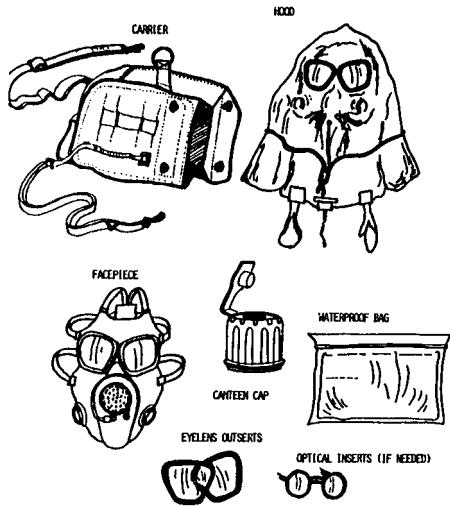
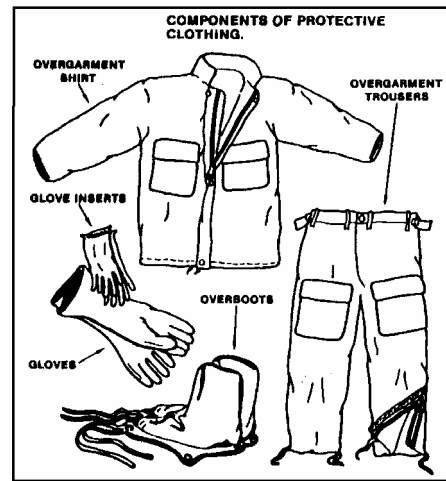


FIGURE 2.16.03
COMPONENTS OF PERSONAL
PROTECTIVE EQUIPMENT



Lesson 2.16

Chemical Biological Radiological Nuclear and High Yield Explosive Worksheet

1. List three effects of chemical agents.

a. _____

b. _____

c. _____

2. Why are biological agents effective?

3. Define radioactivity

4. List three characteristics of nerve agents.

a. _____

b. _____

c. _____

5. How do nerve agents produce an effect?

6. What is the primary action of blood agents?

7. What type of chemical agent attacks the eyes, respiratory tract, and the skin?

8. List five biological agents.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

9. What may be the first clue of an attack with a biological agent?

10. How do you determine if an area has been contaminated with a biological agent?

11. What three general types of injuries are likely to occur as a result of a nuclear explosion?

- a. _____
- b. _____
- c. _____

12. When do thermal burns to the eyes occur?

13. How do nuclear weapons produce injuries?

14. Beta particles can be blocked by what material?

15. X-rays are the same as what other type of radiation?

16. What is the principle use of the MCU2/P mask?

17. List two limitations of the suit, chemical protective overgarment (field).

- a. _____
- b. _____

18. If you are the first at the scene of a hazardous materials accident, you should first establish a(n) _____ zone and a safe zone.

19. The safe zone should be established downhill and upwind from the hazardous materials site.

- a. True
- b. False

20. In many cases, a colored _____ with a four-digit identification number will be on a vehicle, tank, or railroad car, which can be used to identify a hazardous material.

21. _____ has been established by the Chemical Manufacturer's Association to provide 24-hour toll-free information about hazardous material.
22. Based on your own judgement, as soon as it is safe to do so, begin assessment and care of the patients with hazardous materials injuries.
 - a. True
 - b. False
23. Be sure the patient from a hazardous materials incident is _____ prior to transport.
24. OSHA regulations identify four levels of training for HAZMAT incidents. The highest of which is _____.
25. Once a HAZMAT is recognized, only those personnel trained to the _____ level and equipped with the proper personnel protective equipment should enter the immediate site.
26. The actual area where the spilled chemical is located is called the _____ zone.
27. If you are first on the scene, you should immediately rescue people out of the hot zone.
 - a. True
 - b. False
28. All EMS personnel and equipment must be staged in the _____ zone.
29. Secondary contamination occurs when a contaminated person makes contact with someone who previously was clean.
 - a. True
 - b. False
30. It is important to take and reassess _____ of all HAZMAT team members in chemical protective equipment.
31. Field decontaminated patients are completely clean.
 - a. True
 - b. False
32. The severity of any poisoning depends on the substance, _____, dosage, and duration of exposure.
33. After treating a patient from a HAZMAT incident, you may need to decontaminate yourself.
 - a. True
 - b. False
34. At a HAZMAT incident, all equipment used is to be discarded.
 - a. True
 - b. False

Lesson 2.17

Musculoskeletal Injuries

Terminal Objective:

2.17 Perform emergency medical care for musculoskeletal injuries.

Enabling Objectives:

- 2.17.01 State the damage to extremities which may occur due to direct, indirect, and twisting force.
- 2.17.02 List the types of injuries which can occur to extremities.
- 2.17.03 List the signs and symptoms of injuries to the extremities.
- 2.17.04 State the reasons for splinting.
- 2.17.05 List the general rules of splinting.
- 2.17.06 List the complications which may occur due to splinting.
- 2.17.07 List the emergency medical care for a patient with a painful, swollen, deformed extremity.
- 2.17.08 Demonstrate the emergency medical care of patient with a painful, swollen, deformed extremity.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition: Chapter 87, pp. 564-611.
2. Written Assignment: Complete Worksheet 2.18.

NOTES/COMMENTS

Lesson 2.17

Musculoskeletal Injuries Worksheet

1. Painful, swollen, deformed extremities are splinted to reduce _____, prevent _____, and minimize _____.
2. Muscles, bones, and joints are part of the _____ system.
3. _____ are bands of connective tissue that secure muscles to bones.
4. The strong, fibrous material called the _____ covers the bones.
5. Musculoskeletal injuries are caused by three mechanisms: _____ force, and _____ force.
6. Being struck by an automobile may result in a fracture caused by _____ force.
7. Spinal column injury resulting from landing on your feet after falling from a height is an example of injury caused by _____ force.
8. It is very important for you to decide if a patient's injury is a fracture, dislocation, or a sprain, as pre-hospital treatment for each is very different.
 - a. True
 - b. False
9. Femur fractures can cause internal blood loss up to _____.
10. The stretching or tearing of ligaments is called a _____.
11. Your first priority in treating trauma patients is to rapidly identify and treat _____ conditions.
12. The most common sign of a musculoskeletal injury is _____ when the injured part is never moved or touched.
13. List three signs and symptoms, besides pain, of a musculoskeletal injury.
14. After life-threatening conditions have been addressed, you may use a _____ to immobilize the whole body of an unstable patient to minimize on-scene time.
15. Extremity injuries are a high priority if your patient is unstable.
 - a. True
 - b. False
16. For a splint to be effective, it must immobilize _____ and _____.
17. You should realign a fractured long bone when the distal extremity is _____ and lacks _____.

18. Generally, injuries to joints should be splinted in the position found.

- a. True b. False

19. Because complications of musculoskeletal injuries include nerve and blood vessel injury, always examine and record _____, _____ and _____ before and after splinting.

Lesson 2.18

Head and Spine Injuries

Terminal Objective:

2.18 Perform emergency medical care for head and spine injuries.

Enabling Objectives:

- 2.18.01 List injuries to the head and brain.
- 2.18.02 State signs and symptoms of injuries to the brain and skull.
- 2.18.03 State the relationship between mechanism of injury and the potential for injuries to the head and spine.
- 2.18.04 List signs and symptoms of spinal cord injuries.
- 2.18.05 State the guidelines for assessing a patient for spinal cord injuries.
- 2.18.06 List guidelines for immobilizing the spinal cord.
- 2.18.07 State airway management considerations for patients with spinal cord injuries.
- 2.18.08 List the steps taken and the rationale for immobilizing a seated patient.
- 2.18.09 List the steps for securing a patient to a long spine board.
- 2.18.10 State guidelines and steps for the rapid extrication of a patient with spinal cord injuries.
- 2.18.11 State the guidelines for treating a patient wearing a helmet.
- 2.18.12 Demonstrate applying a long spine board to a lying patient.
- 2.18.13 State how to size a cervical spine immobilization device.
- 2.18.14 State the preferred and alternative methods for helmet removal, including how to stabilize the head while removing the helmet.

HOMEWORK:

1. Reading Assignment: Emergency Care, Ninth Edition: Chapter 28, pp 612-651.
2. Written Assignment: Complete Worksheet 2.19.

LABORATORY:

1. The laboratory for this lesson is Performance Checklist 2.19.

Lesson 2.18

Head and Spine Injuries Worksheet

1. The major components of the central nervous system are the _____ and _____.
2. Whenever there is an injury to the skull or brain, suspect _____ damage as well.
3. The only moveable joint in the face is the _____.
4. The _____ fluid bathes the brain and circulates down the spinal cord.
5. The top seven vertebrae are known as the _____ vertebrae.
6. The scalp has few blood vessels, so scalp injuries cause only minimal bleeding.
 - a. True
 - b. False
7. The term for a bruised brain is _____.
8. A collection of blood between the brain and the dura due to an injury is called a _____.
9. Because there is plenty of room for expansion, or swelling, of the brain inside the skull, blood flow is rarely decreased after a head injury.
 - a. True
 - b. False
10. Bruising behind the ear is known as _____.
11. Increased blood pressure and decreased pulse are a sign of brain injury.
 - a. True
 - b. False
12. You should always use the _____ maneuver to open the airway of a patient you suspect has a head or neck injury.
13. Always assume that a patient with a head injury also has a _____ injury.
14. The most reliable sign of spinal injury in a conscious patient is _____ of the extremities.
15. Manual in-line stabilization of a trauma patient's cervical spine should be maintained until the patient is _____.
16. When providing cervical spine stabilization to a trauma patient, you should keep the head in a _____ position, unless the patient complains of pain or the head is not easily moved.
17. When using a KED or similar device to immobilize your patient, you should secure the head _____.

18. List two indications for removing a patient's helmet while providing care.

19. It is generally recommended that a child be removed from a child safety seat after a vehicle collision to properly immobilize the child.

- a. True
- b. False

20. A responsive patient's mental status should be noted by documenting orientation to _____, _____, and _____.

Lesson 2.19

Triage and Medical Decision Making

Terminal Objective:

- 2.19 Perform techniques and demonstrate triage in a tactical and non-tactical setting.

Enabling Objectives:

- 2.19.01 Define terms related to medical decision making.
- 2.19.02 List the purposes of medical decision making.
- 2.19.03 State the principles of tactical triage.
- 2.19.04 State the treatment category titles used in tactical triage.
- 2.19.05 State the principles of non-tactical triage.
- 2.19.06 State the treatment category titles used in non-tactical triage.
- 2.19.07 State the principles of the S.T.A.R.T. System of triage in a mass casualty drill
- 2.19.08 State the evacuation stages and rationale for each.
- 2.19.09 State the purpose of a Field Medical Card (DD 1380).
- 2.19.10 Demonstrate the process of tactical triage in a mass casualty scenario.
- 2.19.11 Demonstrate the process of non-tactical triage in mass casualty scenario.
- 2.19.12 List guidelines for a mass casualty incident plan.
- 2.19.13 List basic concepts of incident management.
- 2.19.14 State the criteria for a multiple-casualty situation.
- 2.19.15 Demonstrate the S.T.A.R.T. process in a mass casualty scenario (LAB)

HOMEWORK

1. Reading Assignment:

- a. Emergency Care, Ninth Edition: Chapter 34, pp 751-763.
- b. Triage and Medical Decision Making Information Sheet.

2. Written Assignment: Complete Worksheet 2.19.

TRIAGE AND MEDICAL DECISION MAKING INFORMATION SHEET

Introduction

Triage and medical decision-making are tasks that can be learned in a classroom, but can only be tested to the fullest in an emergency situation. This topic will provide you with a background in triage and medical decision-making and familiarize you with associated terms, purposes, and examples.

Triage is a French word meaning to pick, sort, or choose. A dynamic process during which decisions are made continuously; triage describes the evaluation and classification of casualties to establish treatment priority and evacuation priority.

A **tactical situation** is the way in which forces set up in order to accomplish the combat mission.

Medical regulating is the process of making medical decisions to categorize patient and arranging transportation to the most suitable treatment facilities. It is utilized during battle situations requiring the rapid return of personnel to duty. The goal is to return as many combatants as possible to duty to accomplish the mission or preserve the safety of the command.

Non-tactical (civilian) triage is utilized during non-combat or civilian casualty situations. The treatment of walking wounded is not critical to the accomplishment of the mission as it is in military triage. The goal is the greater good for the greatest number of individuals, or to save as many lives as possible with available resources.

A **mass casualty**, also known as a multiple casualty incident, occurs when the number of casualties exceeds the capabilities

of the medical department to care for them. There are no hard and fast numbers. On aircraft carriers a mass casualty is called when the number of casualties reaches five or more.

The difference between tactical triage (military) and non-tactical triage (civilian) cannot be stressed enough. During tactical (military) triage the function of the Medical Department is to keep as many men at as many guns, for as many days as possible. During non-tactical (civilian) triage the function of medical personnel is to save as many lives as possible

MEDICAL DECISION MAKING

Why is medical decision making so important? The reason is simple. Medical decisions may mean the difference between rapid recovery and long hospitalization; temporary disability and permanent injury; or survival of a combat unit and loss of mission, even life and death. The purpose of medical decision-making is to:

1. Save lives.
2. Prevent further injury.
3. Preserve resistance and vitality.

Medical decisions are frequently made under adverse situations with incomplete information. A corpsman should expect the unexpected and be prepared for anything. The information needed to make good medical decisions includes:

1. Cause of the need for medical assistance.
2. Location of those needing medical assistance.

3. Supplies and personnel needed to provide medical assistance.

TACTICAL TRIAGE

In tactical situations, medical personnel support the mission by keeping as many men at as many guns for as long as possible. Tactical triage provides as many individuals as possible with the minimum medical treatment needed to allow each one to continue as a battle asset.

The most highly trained medical representative should supervise the triage operation. This individual is responsible for balancing human lives against the tactical situation, the medical supplies on hand, and the capabilities of the medical staff.

As the tactical situation changes, triage decisions may be altered to ensure that the greatest good is being done for the greatest number. Rules for treatment in this situation include: life over limb; function over disfigurement; mission.

TACTICAL TRIAGE TREATMENT CATEGORIES

There are four treatment category titles used in tactical triage:

1. **Minimal -- first priority.** Casualties require minor treatment that can be done on an ambulatory basis. Injuries are cared for quickly so that they may return to their fighting station. Sometimes the patient may be able to render aid to his/her self or receive help from a buddy.
2. **Immediate -- second priority.** Casualties require quick and skilled intervention due to a physiological danger. Including arrest, respiratory distress, hemorrhage, open chest or abdominal wounds, or severe head injuries.

3. **Delayed -- third priority.** Casualties whose treatment can be delayed without significant jeopardy to recovery fall into this category. Closed fractures of major bones, uncomplicated burns, and back injuries--with or without spinal injury are a few examples. These patients will require extensive surgical and professional care after emergency care is rendered.

4. **Expectant -- fourth priority.** This includes casualties suffering from obvious mortal wounds where death appears certain, such as multiple trauma, patient with second to third degree burns over 50% of the body surface. Patient care involves making the patient as comfortable as possible, administering morphine for relief from pain, and in some cases requesting a Chaplain to give last rites.

NON-TACTICAL TRIAGE

The ultimate goal of non-tactical triage is to save as many lives as possible. The greater good for the greatest number of individuals is the focus during treatment of individuals requiring medical assistance.

This requires that the most critically injured patients be both treated first and transported to the hospital first.

NON-TACTICAL TRIAGE TREATMENT CATEGORIES

There are four treatment category titles used in non-tactical triage:

- a. **Red Tag -- highest priority.** Casualties are suffering from life threatening injuries, which are present or imminent. Examples include: Severe uncontrolled bleeding; respiratory or cardiac problems; major burns; cervical spine fractures; open abdominal wounds; and open or closed chest wounds. The patient can be stabilized quickly, will not require

constant care, and will have a high probability of survival if treated and transported immediately.

- b. **Yellow Tag** -- second priority. Casualties in this category also have life threatening injuries, but are not yet in shock. These patients can tolerate a one-hour delay in treatment without risk to their lives. Examples include: back injuries; asthma; pain with normal vital signs; seizures; uncomplicated childbirth; and less than 2 pints of blood loss.
- c. **Green Tag** -- lowest priority. Patient wounds are localized and not life threatening. They require a minimum of care without deteriorating while waiting for treatment. This category also includes patients with wounds so severe that they have little chance of survival. Examples of minimum care injuries include: minor fractures and burns; small abrasions; sprains; and lacerations without significant blood loss; an example of a severe injury is a head wound with exposed brain tissue.
- d. **Black Tag** -- dead. Patients show obvious signs of death, are unresponsive and have no pulse. Examples include: lack of pulse for more than twenty seconds; falls from high places resulting in multiple injuries; decapitation; severed trunk; or total incineration. Note: Cardiac arrest patients should be treated as dead during triage unless there are sufficient personnel to care for both them and other patients.

S.T.A.R.T SYSTEM OF TRIAGE IN MASS CASUALTY

The method of triage currently used by many Emergency Medical Systems nationwide is called Simple Triage And Rapid Treatment (S.T.A.R.T.)

The S.T.A.R.T. procedure allows very few rescuers to rapidly triage large numbers of patients. The advantages are it's fast, simple, and easy to use and remember, and it's consistent.

Procedure:

Upon arrival, conduct a scene size-up, and clear the walking wounded via verbal instructions. This is the first clearing of the patients. All other patients can be triaged according to respiration, perfusion, and mental status.

Respiration

- (1) Open airway. Is the patient breathing? If breathing is less than equal to 30 breaths per minute (bpm), tag the patient as "Immediate."
- (2) Clear the airway if necessary. Insert OPA, or suction airway if indicated and equipment is immediately available.

If the patient is not breathing, tag as "Deceased/Expectant"

Perfusion

If radial pulse is absent/weak and/or capillary refill is greater than 2 seconds, tag the patient as Immediate.

If radial pulse is present and/or capillary refill is equal to, or less than 2 seconds, check mental status.

Mental Status

Can the patient follow simple commands (open eyes, move extremities as instructed), tag the patient Delayed.

If the patient cannot follow simple commands, tag the patient Immediate.

EVACUATION STAGES

Evacuation stages are established after emergency treatment has been rendered. There are several factors that affect evacuation priorities such as:

1. The tactical situation.
2. The type and duration of required transportation (cracker box ambulance versus a helicopter).
3. The type of receiving medical facility.
4. The ability of the casualty to withstand evacuation.

In tactical triage the first evacuation stage includes immediate treatment category patients. In non-tactical triage it includes Red Tag or highest priority category patients. Casualties with chest or neck wounds with respiratory distress, chest or abdominal wounds with internal blood loss but reasonable expectancy to live, head injuries, tourniquets, and missile wounds to the abdomen are all injuries included in the first evacuation stage.

The second evacuation stage includes casualties in which delayed transportation will

not affect how fast the patient would recover or return to the field. In tactical triage this includes patients in the delayed treatment category and in non-tactical triage it includes patients in the Yellow Tag or second priority treatment category.

The third evacuation stage includes casualties with injuries so severe that no matter how fast they are transported they are likely to die. In tactical triage this is the expectant treatment category. In non-tactical triage this is the Green Tag or lowest priority treatment category.

FIELD MEDICAL CARD DD 1380

The Field Medical Card DD 1380, is a standardized NATO card utilized to record admission, treatment, and disposition of casualties. It is used as a record of care along the entire line of treatment from admission to treatment and disposition. It can be utilized for either combat or other emergency casualties.

The DD 1380 is a two part form. Part I, the brown cardboard portion, is wired to the casualties clothing or attached to his/her great toe. Part I follows the patient along the course of treatment and is placed in the patient's medical record afterwards. Part II, the white carbon copy, remains in the book. When all the cards are used, it is forwarded to the Battalion Aid Station (combat) or receiving facility (mass facility).

NOTES/COMMENTS

Lesson 2.19

Triage and Medical Decision Making Worksheet

1. An incident in which the number of casualties is greater than the number of rescuers, or the number of casualties exceeds the capabilities of the medical department to care for them is known as _____.
2. List three purposes of medical decision-making:

3. Prudent medical decision-making may make the difference between _____ and death.
4. Temporary disability instead of permanent injury can be prevented by prudent _____.
5. Which patients are treated first in a combat environment? _____
6. Under military triage, buddy aid should be provided to First Priority patients.
 - a. True
 - b. False
7. A wound with exposed brain tissue is treated under which civilian treatment category?
 - a. Red Tag
 - b. Yellow Tag
 - c. Green Tag
 - d. Black Tag

8. If there are not sufficient personnel to care for other casualties, a patient in cardiac arrest should be placed in what civilian treatment category?
 - a. Highest priority
 - b. Second priority
 - c. Lowest priority
 - d. Dead
9. Casualties in immediate danger who can be saved by quick and skilled intervention are treated under which military treatment category?
 - a. First priority
 - b. Second priority
 - c. Third priority
 - d. Fourth priority
10. When are evacuation categories established? _____
11. Under military triage, First Priority (minimal casualties) should be evacuated first so that they can be returned to the battlefield as soon as possible.
 - a. True
 - b. False
12. The DD 1380 is:
 - a. a standard NATO card
 - b. a record of admission
 - c. a record of treatment and disposition
 - d. all of the above
13. The DD 1380 can be used for combat or other emergencies.
 - a. True
 - b. False
14. What does S.T.A.R.T. stand for? _____
15. Under the S.T.A.R.T. system, what category is a patient who cannot follow simple commands?
 - a.. Immediate
 - b. Delayed