

The

KING

Corpsman Manual

A Summary of NAVEDTRA 14295A

Including Additional Chosen Instructions

Summer 2012

Author's Note

This was written based upon a personal breakdown of the Hospital Corpsman Manual and other instructions. At the time of the summarization the author specifically left out information that was known to her. Upon writing this copy to assist other coworkers the majority of the left out information was researched and included, though there is no guarantee that all information was located. That being said NOTHING can replace a sailor's own motivation to research the NAVEDTRA 14295A and other subsequent instructions in its entirety on their own. It is highly encouraged for you to do so and not rely on other's accounts whether it be from a fellow shipmate, online or wherever else you may find it.

Good luck on your test! ☺

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Chapter 1: Heritage of the Hospital Corpsman

- March 2, 1799 Congress mandated that newly commissioned sailing warships contain a 'cockpit' or sickbay
- First enlisted medical staff were called loblolly boys (the porridge used to feed the patients was called loblolly)
- Loblolly became an official rate in 1814
 - Other names for enlisted medical: surgeon steward, male nurse, baymen, apothecaries
- Hospital Corps became an organized unit in 17 June 1898
 - Ranking system: E-7 Hospital Steward, E-4 Hospital Apprentice First Class
- 1900 – Hospital Apprentice Robert Stanley 1st Medal of Honor winner
 - 1916 – Rank change: Hospital Apprentice, Hospital Corpsman 2nd class, Hospital Corpsman 1st class, Pharmacist Mate 3rd class, Pharmacist Mate 2nd class, Pharmacist Mate 1st class, Chief Pharmacist Mate
- 12 January 1944: Women Accepted for Volunteer Emergency Service (WAVES)
 - Commissioned at Bethesda, Maryland
- 2 April 1948: Red cross was replaced with the caduceus
- Rankings changed to current settings
- Dental Technicians as a separate rating until the merge with Hospital Corpsman: 12 December 1947 – 1 October 2005
- Total of 22 Medal of Honor recipients

Chapter 2: Expeditionary Medicine Administration

- All reports found in NAVMED P-117
- Specific instructions for the management of reports are in BUMEDINST 5210.9
 - a. Forms and Reports Management Program
- All important occurrences reported by Senior Medical Department Representative (SMDR) to OOD
 - a. Things to be reported: severe injuries, conditions that affect the health of the crew, damage or loss of medical or dental equipment
- Memorandum for the record is prepared in accordance with the SECNAVINST 5216.5 series
 - a. Department of Navy Correspondence Manual
 - b. Records any event of historical or legal importance
- SNAP Automated Medical System (SAMS)
 - a. Management tool that tracks medical and dental readiness of navy and marine corps units
- Medical Readiness Reporting System (MRRS)
 - a. Administrative management tool that tracks medical and dental readiness of every active duty and reserve sailor or marine
 - b. Internet based
- Sick Call Treatment Log
 - a. Maintained at SAMS of each ship
 - b. Contains patient information, forwarded to CO daily
- Potable Water Log
 - a. Record the readings of daily residual chlorine or bromine levels and weekly bacteriological examinations
- Navy Maintenance and Material Management (3-M)
 - a. Developed to meet the need to record, report, evaluate the maintenance requirements of the fleet and how to plan, schedule and control planned maintenance
 - b. Guidance provided by OPNAVINST 4790.4 series

- i. Ships Maintenance and Material Management System
 - c. Planned Maintenance System (PMS)
 - i. Reflects the planned maintenance requirements for a particular work center
- 2 types of directives
 - a. Permanent
 - i. Regulates administration, establishes policy, delegates authority, assigns a mission function
 - b. Temporary
 - i. Notice to request comments or approval, annotating information
 - ii. Cannot be in place for more than 365 days
 - c. Change transmittal
 - i. Issue changes to instructions and notices
 - ii. Describes nature of change and how to change it
- **Standard Subject Identification Code (SSIC)**
 - a. **1000 series: Military Personnel**
 - b. **2000 series: Telecommunications**
 - c. **3000 series: Operations and Readiness**
 - d. **4000 series: Logistics**
 - e. **5000 series: General Administration and Management**
 - f. **6000 series: Medicine and Dentistry**
 - g. **7000 series: Financial Management**
 - h. **8000 series: Ordinance Material**
 - i. **9000 series: Ship Design and Material**
 - j. **10000 series: General Material**
 - k. **11000 series: Facilities and Activities Ashore**
 - l. **12000 series: Civilian Personnel**
 - m. **13000 series: Aeronautical and Astronautical Material**
 - n. **16000 series: Coast Guard Missions**
 - i. Can be subdivided into **primary (1100), secondary (1110) and tertiary (1111)**

- SECNAVINST 5210.8 series
 - a. Department of the Navy Records Management Program
 - b. Provides guidance for record maintenance, use and disposition
- Operational Medical and Dental Readiness
 - a. Individual Medical Readiness (IMR)
 - i. Requirements in SECNAVINST 6120.3
 - 1. Periodic Health Assessment for Individual Medical Readiness
 - ii. Composed of: individual medical equipment, immunizations, readiness laboratory studies, deployment limiting conditions, PHA, dental readiness
 - b. Dental Readiness:
 - i. Dental Class 1
 - 1. Deployable, no dental treatment needed
 - ii. Dental Class 2
 - 1. Deployable, has an oral condition that if not treated does not have the potential to become an emergency within the next 12 months
 - iii. Dental Class 3
 - 1. Non deployable, has an oral condition that will result in an emergency within the next 12 months
 - iv. Dental Class 4
 - 1. Individual who needs an exam or has an oral condition that is unknown
- Medical and Dental Support for Fleet Marine Force (FMF)
 - a. Battalion Aid Station (BAS)
 - i. Provides direct support to company and platoon
 - ii. Provides advanced trauma life support
 - iii. Normally staffed by 2 medical officers and 65 corpsmen
 - iv. FMF provides 2 types of support to BAS
 - 1. Combat Personnel

- a.** Provides medical and initial first aid to prepare the casualty for further evacuation

2. Support Personnel

- a.** Provides surgical and medical aid to those who need early definitive care and cannot be further evacuated

b. Medical Battalion:

- i.** Provides casualty collection, emergency treatment, temporary hospitalization, specialized surgery, evacuation, disease prevention

c. Fleet hospitals

- i.** Contain up to 500 beds
- ii.** Used in operations greater than 60 days

Chapter 3: Healthcare Administration Programs

- Armed Forces Health Longitudinal Technology Application (AHLTA)
- Clerk cannot deny eligibility for health care, can only be done by command designated supervisory personnel
- DEERS eligibility overrides:
 - DD1172, all other family members recently becoming eligible for benefits, new ID card, expired ID card (must get new one in 120 days), sponsors entering active duty, newborns, emergency care, sponsors duty station is outside continental united states, survivors
- DEERS eligibility exceptions
 - SECNAV designees, foreign military personnel
- Priority of Care
 - Category 1A: Active duty
 - Category 1B: Reserve and National Guard
 - Category 2: Active duty family members
 - Category 3: Senior Reserve Officer Training Corps
 - Category 4: Retired members and their dependents
 - Category 5: Civilian employees of the Federal Government
 - Category 6: all others
- Patient Rights
 - 1. Medical/Dental care, 2. Pain management, 3. Respectful treatment, 4. Privacy and confidentiality, 5. Identity of PCM, 6. Explanation of care, 7. Informed consent, 8. Research projects, 9. Safe environment, 10. MTF rules and regulations
- Patient Responsibilities
 - 1. Providing information, 2. Pain management, 3. Respect and consideration, 4. Compliance with medical care, 5. Medical records, 6. MTF rules and regulations, 7. Reporting of patient complaints
- Family Advocacy Program (FAP)
- Informed Consent

- Provider gives the patient all knowledge necessary to make an informative decision
- Lawful Consent
 - Patient made a knowledgeable decision with full awareness of the consequences
- Consent Witness
 - Preferable that the witness is someone not participating in the procedure or a family member of the patient
- Quality Control Report (QCR)
 - Notifies CO, Command Risk Manager

Chapter 4: Medical Records

- NAVMED 6150/21 – 30
 - US Navy Medical Outpatient and Dental Treatment Record
- Secondary records for active duty
 - Allowed in OBGYN, Family Advocacy, Psychiatry Clinic, Psychology clinic
 - Contained within the MTF
 - Kept for convenience
- Temporary Records
- Also known as Ancillary Records
- **CO** has ultimate responsibility for medical records
 - Patient cannot maintain or keep their own record
- Pencil entries
 - Made in first section of the medial record jacket in the upper left corner
 - Includes command and rank
- **Family Member Prefix**
 - 20: active duty
 - 12: activated reserve
 - 30 – 39: Dependent spouse/former spouse
 - 01 – 19: Dependent child
 - 40 – 44: Dependent mother or stepmother
 - 45 – 49: Dependent father or stepfather
 - 50 – 54: Dependent mother in law
 - 55 – 59: Dependent father in law
 - 60 – 69: Other authorized dependents
 - 98: civilian employees
 - 99: all others
- Preparing the medical record
 - Part I
 - Done in pencil

- Includes date of arrival, projected rotation date, home address, phone number, command UIC and phone number
 - Part II
 - Sign DD 2005 (privacy act) in pen
 - Part III
 - Disclosure Accounting Record
- Navy Medical Record Filing
- Navy uses Terminal Digit Filing System
 - Uses second to last digit of SSN, then the last digit, then the 6th and 7th digit, then the corresponding digits
 - **Color Coded as per second to last digit of SSN**
 - NAVMED 6150/20 = Orange = '0'
 - NAVMED 6150/21 = Green = '1'
 - NAVMED 6150/22 = Yellow = '2'
 - NAVMED 6150/23 = Gray = '3'
 - NAVMED 6150/24 = Tan = '4'
 - NAVMED 6150/25 = Blue = '5'
 - NAVMED 6150/26 = White = '6'
 - NAVMED 6150/27 = Brown = '7'
 - NAVMED 6150/28 = Pink = '8'
 - NAVMED 6150/29 = Red = '9'
- NAVMED 6150/7
 - Health Record Receipt (pink card)
- Located in Part I of Outpatient Medical Record
 - Record of Preventative Medicine and Occupational Health
 - DD 2766
 - Adult Prevention and Chronic Care Flowsheet
 - Contains: Significant health Problems, Hospitalizations, Surgeries, Medical Alerts, Medications, Medical Maintenance
 - NAVMED 6150

- Summary of Care Form
- SF 601
 - Immunization Record
- NAVMED 6000/2
 - Chronological Record of HIV testing
- DD 771
 - Eyewear Prescription
- NAVMED 6490/1
 - Visual Record
- NAVMED 6470/10
 - Record of Occupational Exposure to Radiation
- DD 2215
 - Reference Audiogram
- DD 2216
 - Hearing Conservation Data
- NAVMED 6260/5
 - Asbestos Medical Surveillance Program
- DD 2493 – 1
 - Asbestos Exposure Questionnaire
- OPNAV 5100/15
 - Medical Surveillance Questionnaire
- Located in Part II of Outpatient Medical Record
 - Record of Medical Care and Treatment
 - NAVPERS 5510/1
 - Record Identifies for Personnel Reliability Program
 - SF 558
 - Medical Record for Emergency Care
 - SF 600
 - Chronologic Record of Medical Care
 - SF 513

- Medical Record Consultation (referral)
 - DD 2161
 - Referral for Civilian Medical Care
 - After Patient is deceased
 - Attestation sheet
 - DD 2604
 - Certificate of Death
 - SF 503
 - Autopsy Protocol
 - SF 523
 - Authorization for Autopsy
- Located in Part II of Inpatient Medical Record
 - NAVMED 6300/5
 - Inpatient Admission Disposition Record
 - SF 502
 - Narrative Summary
 - SF 539
 - Abbreviated Medical Record
 - SF 509
 - Progress Notes
 - SF 516
 - Operation Report
 - SF 517
 - Anesthesia Report
 - SF 522
 - Request for Administration of Anesthesia
 - DD 602
 - Patient Evaluation Tag
- In Part III of Outpatient Medical Record
 - Physical Qualifications
 - NAVMED 1300/1

- Medical and Dental Overseas Screening Review for Active Duty and Dependents
 - NAVPERS 1300/16
 - Report of Suitability of Overseas Screening
 - NAVMED 6100/1
 - Medical Board Report Cover Sheet
 - NAVMED 6100/2
 - Medical Board Statement of Patient
 - NAVMED 6100/5
 - Abbreviated Temporary Limited Duty
 - DD 2807
 - Report of Medical History
 - DD 2808
 - Report of Medical Examination
 - NAVPERS 1754/1
 - Exceptional Family Member Program Application
 - DD 2569
 - Third Party Collection Program
 - OPNAV 5211/9
 - Record of Disclosure
 - Privacy Act 1974
 - DD 877
 - Request for Medical and Dental records
- Located in Part IV of Outpatient Medical Record
 - Record of Ancillary Studies, Inpatient Care, Miscellaneous Forms
 - SF 515
 - Tissue Examination
 - SF 519
 - Medical Record Radiographic Reports
 - SF 508
 - Blood or Blood Component Transfusion

- SF 545
 - Laboratory Report Display
 - SF 511
 - Vital Signs Record
 - SF 512
 - Plotting Chart
- Dental Records
 - Located in Part I
 - Unmounted radiographs in envelopes
 - Sequential bitewing radiograph
 - Panoramic – full mouth radiograph
 - Located in Part II
 - NAVMED 6600/3
 - Dental Health Questionnaire
 - Located in Part III
 - Dental Exam Forms
 - EZ 603
 - Dental Examination Report
 - Located in Part IV
 - Current Dental Status Form
 - EZ 603A
 - Dental Treatment Reports
 - Forms: SF 502, SF 513, SF 509, SF 515, SF 522

Chapter 5: Medical Logistics

- Integrated Logistics Support
 - Logistics: Encompasses the acquisition, accounting, sustainment and disposition of assets within the DON
- Organization and Structure: Key Areas within Medical Logistics Department
 - Technical Review
 - Screens all requisitions to verify that items are available
 - Maintains vendor catalogues and Federal Supply Schedule (FSS)
 - Purchasing
 - Where commercial procurement takes place
 - Warehouse/storeroom/receipt control
 - Plans and directs operations to receive and control incoming and outgoing supplies and equipment for storage
 - Maintains records of receipts and invoices
 - Stock Control
 - Responsible for inventory management
 - Equipment Management
 - Administers the commands property utilization and disposal program
 - Biomedical Equipment management
 - Administers medical and dental equipment preventative and corrective maintenance programs
 - Central Supply
 - Plans and directs operations necessary to order and receive material for working stock levels
- NAVSUP P-485
 - Volume I – Naval Supply Procedures, Afloat
 - Volume II – Naval Supply Procedures, Supply Apprentices
 - Volume III – Naval Supply Procedures, Ashore
 - Establishes policies for operating and managing supply departments and activities
- NAVSUP P-409
 - Milstrap Manual

- Reference for personnel responsible for Milstrap documents
- NAVMED P-5132
 - Bureau of Medicine and Surgery Equipment Management Manual
- Procurement:
 - Obtaining materials or services
- Contracting Authority
 - Dollar limitation and acquisition methods the command and purchasing are restricted to when placing governmental orders
- Commitment
 - When appropriated funds have been put aside by fiscal officers for acquisition of goods and services
- Obligation
 - Qualified purchasing agent enters into a contracted agreement
- Unauthorized Commitment
 - When someone lacking authority enters into a contracted agreement
- Ratification
 - Process that an unauthorized commitment is reviewed
- Priority Designator
 - 2 digit number used by the customs to determine the urgency of the item
- Micro-Purchase
 - Under \$3,000
- Non Procurement Official
 - Can e less than \$300 per order, limit \$20,000 per fiscal year
- SERVMART
 - Source for purchasing non medical administrative materials
- NSN
 - 13 Digit National Stock Number
 - Consists of:
 - 4 digit Federal Supply Code (FSC)
 - 9 digit National Item Identification Number (NIIN)

- First and second NIIN numbers are for the National Codification Bureau (NCB)
- Recorder Point (ROP)
 - Level which replenishment action is indicated
- Order and Ship Time (OST)
 - Time between the initiation of stock replenishment action and receipt of an item
 - Usually 30 days
- BUMED Controlled inventory items
 - Essential to preserve life
 - Highly pilferable
 - High cost
- DD Form 1348
 - Used to order standard stock items
- DD Form 1348-6
 - Used to order material that can't be identified
- DD Form 1146
 - Requisition and Invoice Shipping Document
- DD form 1155
 - Order for Supplies and Services
- Inventories
 - Controlled Substance Inventory
 - Monthly, unannounced
 - Bulkhead to bulkhead inventory
 - Annually, encompasses at least 90% of items
 - Velocity inventory
 - Performed on items with a high turnover rate
- Boxes stored at least 18 inches from bulkhead
- Shipments should have at least 6 months left on expiration date upon receiving
- Acid Locker
 - Leak proof, lead lined
- J-Stock

- Suspended stock, unsuitable for use
- Organic chemicals
 - Alcohols, ketones, esters, solvents, monomers
- 3 types of Property, Plant and Equipment: Heritage (historical), Stewardship land, General (personal and real property)
- Equipment Program Review Committee
 - In charge of materials, oversight of scarce resources
- Levels for Unsatisfactory Equipment
 - Type I
 - Harmful or defective that can or has caused injury or death
 - Type II
 - Suspected of being harmful, deteriorated or unsuitable
 - Type III
 - Unsatisfactory because of malfunction, design, deficiency or defect
 - Type II and Type III must be reported in no more than 10 Days
- Maintenance Levels
 - Biomedical Equipment Maintenance Division (BIOMED) responsible for Maintenance
 - Level I – Performance Testing
 - Responsibility of operator, must be performed daily
 - Level II – Preventative Maintenance
 - Periodic inspection
 - Level III
 - Maintenance Recovere Overhaul
- DD 1348
 - Most common receipt document

Chapter 6: Human Anatomy and Physiology

Chapter not summarized in full due to size and inadequate frequency of questions on advancement exams. All notes chosen based upon questions remembered from previous advancement exams.

- Things to know:
- Different quadrants and which major organs are located in which quadrant

- Saggital plane
 - Plane that divides the body into left and right halves
- Frontal plane (coronal)
 - Plane that divides the body into front and back
- Horizontal Plane (transverse)
 - Plane that divides the body into upper and lower halves
- Anterior/Ventral
 - Pertaining to the front
- Posterior/Dorsal
 - Pertaining to the back
- Medial
 - Towards the Midsaggital line or the middle of the body
- Lateral
 - Away from the middle of the body
- Proximal
 - Nearest to the point of origin or the trunk
- Distal
 - Away from the point of origin or the trunk
- Caudal
 - Towards the lower end of the body
- Supine
 - Lying down face up

- Prone
 - Lying down face down
- Lateral recumbent
 - Lying on either side
- Ceremonius glands
 - Secrete earwax
- Sebaceous glands
 - Located everywhere but the soles of the feet and the palms of the hands
 - Secrete oil, lubricates the skin and hair
- 1 liter of sweat secreted daily on average
- 206 bones in the human body
 - Femur is the longest bone in the body
 - Mineral salt gives bones strength
 - Cancellous tissue
 - Spongy porous center of the bone
 - Medullary canal
 - Center of the bone that holds marrow
 - Yellow bone marrow located in long bones
 - Red bone marrow located in ends of long bones
 - 4 classifications of bones
 - Long short flat irregular
 - Bones of the ear
 - Malleus, incus, stapes
 - Vertebrae
 - 7 cervical, 12 thoracic, 5 lumbar, 5 sacral
 - Ribs
 - 7 true ribs, 5 false ribs per side
 - Bone classification
 - Immovable, slightly movable, freely movable
 - Movable joints
 - Ball in socket, hinge, pivot, saddle, condyloid, gliding

- Ligament
 - Connects bone to muscle
- Tendon
 - Connects muscle to bone
- Muscle makes up 1/2 of body weight
- Rigor mortis occurs from 10 minutes to several hours after death
- Salivary glands produce 2-3 pints of saliva daily
- Biceps femoris make up the hamstrings
- Sites of IM injection
 - Gluteus maximus, deltoid, quadriceps
- Sartorius is the longest muscle in the body
- Blood volume is 5-6 liters
 - Made of 55% plasma, 45% blood cells
 - Red blood cells live 100-120 days
 - Normal white blood count is 6,000 – 8,000 per cubic millimeter
 - Total blood count 250,000 per cubic millimeter
- Systole
- Constriction of the heart
- Diastole
- Relaxation of the heart
- Median cubital vein
- Primary antecubital veinipuncture spot
- It takes 20 minutes to 2 hours for food to pass through the small intestine
- Large intestine:
 - 5 feet long
 - Made of the cecum, colon and the rectum
- Residual air after lung expiration is 1,200 ml
- Sheny stokes: respiration increases to a certain point
- Trochlear nerve turns eye to the side and downcorticoids: regulates salt and water
- Minimum urine produced per day = 500 ml

Chapter 7: Oral Anatomy and Physiology

- First teeth (baby teeth)
 - Growth Period
 - Occurs between 5th and 6th week of prenatal life
 - Occurs in 3 stages: Bud stage, Cap stage (proliferation), Bell stage (histodifferentiation)
 - Ameloblast
 - Enamel forming cells
 - Odontoblast
 - Dentin forming cells
 - Apposition
 - Depositing of the matrix for the hard surface
 - Calcification
 - Process of organic tissue becoming hardened, builds in layers
 - Eruption
 - When tooth comes into proper position
 - Exfoliation
 - When the root reabsorbs and the tooth falls out
- Makeup of the tooth
 - Crown
 - Anatomical crown: encased in enamel
 - Clinical crown: part exposed in the mouth
 - Root
 - Covered in cementum
 - Separation called furcation (2 separations called bifurcation)
 - Enamel
 - Translucent, calcified substance that covers the anatomical crown and protects the dentin
 - Hardest tissue in the body, can endure 100,000 psi
 - 96% inorganic minerals, 1% organic mineral, 3% water
 - Dentin

- Largest portion of the tooth, yellow in coloration
 - 70% inorganic matter, 30% organic matter and water
 - Cementum
 - Covers the roots, anchors teeth to tooth sockets
 - Dental pulp
 - Where the formation of dentin is
- Makeup of other oral anatomy
 - Periodontium
 - Tissue that surround and support the teeth collectively
 - Masticatory tissue
 - Tissue that covers the hard palate and gingival
 - It is keratinized
 - Hard palate structure
 - Incisive papilla, palatine raphe, palatine rugae
 - Gingiva
 - Specialized masticatory mucosa, firm and resistant
 - Unattached gingiva
 - Gingival margin, gingival sulcus, epithelial attachment, interdental papillae
 - Lining mucosa
 - Found on inside of lips, cheeks, vestibule and under the tongue
 - Thin and fragile
- Mouth is split into 4 quadrants
 - Each quadrant contains: Central incisor, lateral incisor, cuspid, 1st bicuspid, 2nd bicuspid, 1st, 2nd, and 3rd molar
 - Universal numbering system
 - Teeth are numbered from right maxillary 3rd molar (#1) to right mandibular 3rd molar (#2)
 - Primary numbering system
 - Teeth are labeled A-K
- Surfaces of the tooth

- Facial surface
 - Towards the lips or cheek
- Mesial surface
 - Proximal surface closest to the midline of the arch
- Distal surface
 - Orientated away from midline of the arch
- Lingual surface
 - Faces towards the tongue
- Embrasure
 - Interproximal space that isn't occupied
- Diastema
 - Interproximal space with no contact point
- The bite
 - Vertical overlap
 - Extension of maxillary teeth over mandibular counterparts (overbite)
 - Curve of Spee
 - Slight curved plane of the lower teeth
 - Curve of Wilson
 - Concave curve of the mandibular arch
 - Occlusional plane
 - Combination of the Curve of Wilson and the Curve of Spee
 - Dental Angle Class I
 - Normal
 - Dental Angle Class II
 - Retrognathic (overbite)
 - Dental Angle Class III
 - Prognathic (underbite)

Chapter 8: Oral Pathology

- Saliva averages 750 million microorganisms per milliliter
- Diseases of the oral mucosa and tissues
 - Lesions below the surface
 - Abscess
 - Localized collection of pus, commonly caused by bacterial infection
 - Cyst
 - Enclosed pouch or sac containing fluid or semi-solid material
 - Ulcer
 - Disruption of the superficial covering of mucosa or skin
 - Lesions above the surface
 - Vesicles
 - Small elevation that contains fluid
 - Leaves superficial ulcers upon rupture
 - Hematoma
 - Localized collection of blood
 - Well defined and turns a dark color with time
 - Non-elevated Lesions
 - Petechiae
 - Round, pinpoint non-raised, purplish-red spots caused by mucosa or dermal hemorrhage
 - Ecchymoses
 - Large, purplish red areas caused by blood under the skin or mucosa
 - Turns a blue to yellow color
- Diseases of the tooth and gingiva
 - Dental caries
 - Caused by streptococci
 - First appears as chalky white spots on enamel (incipient)
 - Indicates decalcification

- “Arrested” if it doesn’t continue, will be dark and hollowed out
 - Recurrent dental caries
 - When a dental carie occurs where there is already a restoration
 - Pit and fissure caries
 - Develops in depressions of tooth surfaces
 - Smooth Caries
 - Usually on the proximal surface
- Pulpalgia
 - Pain in the dental pulp
 - Short sharp shooting pain that’s worse when lying down or climbing stairs
- Pulpitis
 - Inflammation of the dental pulp
 - Results from dental bacterial infection or a fractured tooth
 - Dull ache that can progress to severe, pulsating pain
- Periapical Abscess
 - Pulp becomes inflamed
 - Smells pus-like
 - Ulcers form in pulpal canal, can spread to the bone
 - Tooth feels “high” when biting, sensitive to the touch
- Necrosis
 - Death of tissue
 - May not be any pain
 - Smells foul, rotten
- Healthy gingival should be firm and have the consistency of an orange
- Periodontal disease is the MOST prevalent disease in mankind
 - Symptoms: bleeding with brushing, tender, red swollen gums, tooth shifting, tooth elongation, mobile teeth, purulent exudates in between teeth, halitosis
- Gingivitis
 - Inflammation of the gingival tissue
 - Marginal gingivitis

- Most common gingival disease
 - Starts at the tips of the papillae, results in swelling and loss of texture, easy bleeding
- Necrotizing Ulcerative Gingivitis (NUG)
 - AKA Trenchmouth, Vincent's Infection
 - Redness, swelling, pain, accumulation of calculus, bleeding, film of necrotic (white) tissue that can be wiped off leaving a raw red wound
 - Ulceration leaves a punched out appearance of gingival crest
 - Unpleasant odor and foul taste
- Periodontitis
 - Chronic inflammatory condition involving gingival, periodontal membrane and alveolar bone
 - Results in loss of bone, periodontal pocket formation, increases tooth mobility
 - Gingival becomes bluish red
- Periodontal pocket
 - Inflammation forms at the apex of the tooth
 - Gingiva bleeds easily, calculus forms shelf-like projection
 - Interdental papillae is destroyed
 - Results in loss of teeth
- Periodontal abscess
 - Results from long, continuous irritation
 - Surrounding gingival becomes inflamed and swollen
- Pericoronitis
 - Inflammation of gingival around a partially erupted tooth
 - Most common with wisdom teeth
 - Gingival flap may become infected
- Recurrent Aphthous Stomatitis (RAS)
 - Canker sores, painful ulcerations
 - Seven to ten day healing time

- Herpes Simplex
 - Type 1 is oral
 - Type 2 is genital
- Oral Manifestations of HIV
 - Candidiasis
 - Fungal, red or white in color
 - Hairy Leukoplakia
 - Viral tongue infection
 - White, slightly raised lesions
 - Kaposi Sarcoma
 - Cancerous
 - Dark bluish – purple lesions that involve blood vessels
- Attrition
 - Loss of substance of a tooth from a wearing away process caused by teeth against teeth

Chapter 9: Preventative Medicine and Infection Control

Chapter 10: Disinfection and Sterilization

- Sanitation
 - Hygienic means of promoting health through prevention of human contact with hazardous waste
- Vector
 - Any animal capable of transmitting pathogens
- Pests
 - Organisms that adversely affect military operations
- Secnavinst 4061.1 series
 - Food Service Training Program
- NAVSUP publication 486
 - Food Service Management of General Masses
- NAVMED P-5038
 - Control of Communicable Disease Manual
- BUMEDINST 6240.1
 - Standards for Potable Water
- Wastewater dumping from ship is illegal if it is less than 3 nautical miles from shore
- Bacteria
 - Spores can remain alive but dormant in unfavorable conditions until favorable conditions occur
 - Types (from hard to easy to kill) 1. Spores, 2. Tubercle bacillus, 3. Nonlipid viruses, 4. Lipid viruses, 5. Vegetative bacteria
 - Resistant to heat
- Viruses
 - Smaller than bacteria
 - Can't reproduce or live outside of host
 - Not affected by antibiotics
 - Can be bacterial plant or animal
 - Susceptible to be killed through boiling water for 20 minutes

- Protozoa
 - Single celled animals that don't have a rigid cell wall
- Fungi
 - Plants that lack chlorophyll
 - Spores easily killed by heat
- Handwashing
 - Most effective method of stopping spread of infection
 - Should be done at: the beginning of the day, before and after each patient, before and after handling food, before and after handling medication, after coughing and sneezing, after using the toilet, after any contact with any bodily fluids, at the end of the day
 - Technique
 - Remove jewelry and ornaments, run hands under running water and apply antibacterial soap, rub vigorously with fingers entwined, clean under fingernails, scrub wrists and lower forearms
 - Visibly soiled hands require more time
 - Transient flora (removed with handwashing)
 - Can't survive and multiply on skin
 - Not firmly attached to the skin
 - Can be removed with friction
 - Water Based Cleaners
 - Chlorhexidine Gluconate
 - Antiseptic, anti microbial effect
 - 4% chlorhexidine gluconate with 4% isopropyl
 - Has sustained effect
 - Approved as a surgical scrub
 - Iodophors
 - Complexes of iodine with organic compound
 - Doesn't have sustained effect
 - Dries skin
 - Waterless Cleaners

- 70% isopropyl alcohol
 - Disinfects in 20 seconds
 - Should only be used when hands are not visibly soiled
- Surgical scrub
 - Use 6ml of antiseptic detergent and lather 2 inches above elbow, then scrub with scrub brush and 6 ml antiseptic detergent 30 strokes across fingertips, 20 for between fingers and bottom of hand
- Transmission Based Precautions
 - Airborne Precautions
 - Private, negative pressure room with air pumped outside or HEPA filter
 - Respiratory protection required for personnel
 - Examples: measles, tuberculosis, chicken pox
 - Patient transport limited to essential purposes only
 - Droplet Precautions
 - Private room if possible, at least 3 foot distance from all other patients
 - Mask required for personnel
 - Patient transport limited to essential purposes only
 - Contact Precautions
 - Private room if possible
 - Gloves worn upon entering, remove before leaving and wash immediately after, wear disposable gown
 - Transport only if necessary
- Infectious Chain of Events
 - Reservoir of agent, portal of exit, mode of transmission, portal entry, susceptible host
 - Removal of only one component will prevent infectious chain
- Infection Control (this segment of NAVEDTRA 14295A will be combined with BUMEDINST 6600.10A Dental Infection Control due to similarity of subject material)
- Asepsis
 - Process of preventing access to microorganisms
- Automated Washer Processor

- Washes, sterilizes, consists of dishwasher or other mechanical washing devices
- Bioburden
 - The number of microorganisms contaminating and object
 - Also known as bioload or microbial load
- Biological Control
 - Unprocessed biological monitor from the same lot as the test monitor
- Bowie Dick Test
 - Diagnostic test of a prevacuum sterilizer's ability to remove air from the chamber and prevent air reentry
 - NOT a sterility assurance test
- Chemical Disinfectant
 - Destruction or inhibition of most viruses and bacteria while in their active growth phase
 - Does not kill all spores
 - Cannot be verified by a monitor
- Chemical Indicator
 - Chemical dyes used to determine whether the conditions required for sterilization are met
 - Also known as a monitor, dosage indicator or process indicator
- Dental Item Classification
 - Critical
 - Penetrates skin, mucous membranes or bone
 - Must be sterile before use
 - Semicritical
 - Frequently contacts mucous membranes but cannot be sterilized to their design
 - High level disinfection minimum requirement
 - Noncritical
 - Doesn't normally penetrate or contact mucous membranes but are exposed to contamination
 - Intermediate level disinfection

- Spray-Wipe-Spray
 - Acceptable method of cleaning and disinfecting
 - No EPA agent cleans in one step
- Pre-Sterilization
 - All handpieces must be disinfected prior to sterilization by immersion in disinfectant
 - Automated washer is preferred
 - Ultrasonic cleaner
 - Uses ‘cavitation’
 - Bubbles form and burst
 - Manual Scrubbing
 - Triple sink preferred
- Disinfectants
 - High level: kills nearly all types of bacteria and perhaps some spores
 - Intermediate level: kills all types of bacteria except spores
 - Low level: kills lipid and vegetative bacteria
 - Glutaraldehyde based solution
 - High level
 - Toxic Vapor
 - Always wear eyewear and gloves when handling
 - Requires proper ventilation
 - Rinse immersed items with sterile water before use
 - 2 – 3.2% is FDA registered
 - Not registered as a surface disinfectant
 - Iodophors
 - Intermediate Level
 - Possible antiseptic
 - Made of iodine and detergent
 - Don’t use on white or pastel surfaces but can be used on skin
 - When it turns from amber to clear the effectiveness is lost

- Use fresh solution daily
 - Unstable at high temperatures
 - Inactivated by water or alcohol
 - Don't use as a sterilizer
- Chlorine Dioxide Based Solutions
 - High level
 - Effective surface disinfectant
 - Can be used on semi-critical items not subject to corrosion
 - 3 minute immersion for disinfectant, 6 hours for sterilization
 - Excess must be discarded daily
 - Put in closed containers with adequate ventilation
 - Corrosive (especially to aluminum), limited use only, irritating to the eyes
- Phenolics
 - Intermediate level
 - Available as a spray, extremely irritating
 - Can be used on surfaces but leaves a film that can hurt plastics and etch glass
- Pre-sterilization process
 - Inspect, sort critical from non-critical
 - Wrap
 - Never place surgical knives or blades in the tray
 - Loosely, open hinges, double wrap if not heat sealed
 - Launder muslin afterwards (use of muslin wraps is discouraged)
 - Use internal and external indicators
 - Label with ID number of sterilizer, date of sterilization and expiration
 - Central Sterilizing Room functional flow
 - Receiving, cleaning, processing, sterilization, sterile storage, issue
- Sterilization Methods
 - Steam Heat

- Most effective method of sterilization
- Arrange packs loosely, use perforated or mesh bottom trays
- Biological monitoring weekly, Bowie Dick test weekly
- Log information:
 - Sterilizer ID number, sterilization dates and duration, temperature of cycles, operators name, biological monitoring results, repair and preventative maintenance dates and actions taken
- Dry Heat
 - Needs to be above 320 degrees F to achieve sterilization
 - Least expensive form of sterilization
 - May damage rubber or plastic
 - Can use conduction, radiation or convection
 - 90 minutes 320 – 345 degrees F
- Chemical Vapor
 - Mixture of alcohols, formaldehyde, water and other
 - Doesn't corrode or dull instruments
 - Requires proper ventilation
 - 20 minutes at 270 degrees F
- Ethylene Oxide
 - 2 – 3 hours at 120 degrees F
 - No new equipment, the gas is an OSHA problem
- Liquid Chemical
 - Made of glutaraldehyde
 - Submerge for 10 hours
 - Rinse with sterile water
 - EPA classified as asporicidal
 - Treat as high level disinfectant
- Sterilization Machines
 - Gravity Displacement (autoclave)
 - Incoming steam displaces residual air

- 30 minutes at 121 – 123 degrees C (250 – 254 degrees F) 15 – 17 ppsi OR
15 minutes at 132 – 135 degrees C (270 – 274 degrees F) 30 ppsi
 - Prevacuum
 - Relies on one or more pressure and vacuum excursions at the beginning and the end of each cycle
 - Each cycle must start at 132 – 135 degrees C
- Sterilization Monitors
 - External: heat sensitive chemical that changes color
 - Internal: chemical dyes that change color
 - Perform weekly at a minimum, use a test pack
 - Positive result: notify ICO, record in the log
 - Get all items sterilized since the last test
 - Test it a second time
 - Dosage indicators inside pack, process indicators outside the pack
- Critical category items requiring sterilization
 - Surgical instruments
 - Handpieces – use autoclave bags
 - Burs and diamonds – clean in ultrasonic cleaner before dry heat sterilization
 - Rubber products – use ethylene oxide or chemical, then steam/dry sterilize
- Shelf life for sterilized items
 - Paper envelope – 365 days
 - Double Muslin wrap – 30 days
 - Double Muslin wrap, plastic covered, heat sealed – 365 days
 - Peel plastics – 365 days
 - Parchment paper or Dennison wrap – 365 days
 - If covering is compromised in any way then it is ‘expired’
 - Never store sterilized instruments on cold or metal surface
- Command oversight program done by CO and OIC
- Only the CO can appoint the OIC
 - OIC responsibilities
 - Infection control addressed at least quarterly

- Develops/maintains a system for reporting, treating, referring, monitoring infectious material
 - Establishes a medical surveillance program to round all occupational exposure incidents:
 - First aid
 - Testing and evaluation of HBV and HIV, follow up in 6 weeks, 12 weeks and 6 months
 - Mechanism of reporting
 - Ensuring cleansing techniques are done accurately
 - Reviewing and revising infection control policies and procedures annually
 - Briefs new employees and ensures everyone is up to date on training
 - Develops a program to track infectious waste
- Universal Precautions
 - Personal Protective Equipment
 - Gloves
 - Gloves should be worn with all patient contact activity
 - Do not re-use, one pair of gloves per patient or per procedure
 - Sterile Surgical Gloves
 - Highest quality, most expensive, best fitting
 - Under Gloves
 - Worn under surgical gloves
 - Helps protect against infection and needle sticks
 - Standard practice in most facilities
 - Procedural gloves
 - Not sterile
 - Latex examination gloves
 - Least expensive
 - Nitrile gloves
 - Can be sterile or not sterile
 - 3x more puncture resistant than rubber, non-latex

- Face Mask and Shield
 - Surgical Mask
 - Splash/aerosol guard
 - Cone Mask
 - Splash/aerosol guard
 - N95 Respirator
 - Splash/aerosol guard
 - Comes in different sizes, protects against airborne viruses
 - Protective eyewear
 - Protects against splashes
 - All dental patients must wear them
 - Wash and disinfect between patients
 - Headwear
 - Protects head/hair against droplets
 - Wash daily
 - Wear attire only in MTF or DTF
 - Don't eat or drink in MTF or DTF
- Preparing the Treatment Room (DTF)
 - Flush unit water lines and hoses for at least 1 minute at the beginning of the day
 - Potable water can contain 100 colony forming units per millimeter and dental units can have 1,000,000
 - Handpieces
 - Lubricate for 30 seconds after each patient and run for 15 seconds between each patient
 - Flush one minute at beginning of the day and 30 seconds between each patient
 - Aerosols
 - Not advised in work environment
 - Aerosols average 1.3 microns in diameter, to penetrate alveolar bronchi it needs to be 3 microns
 - Have patient rinse mouth with .12% chlorhexidine gluconate

- Reduces microbe count by 97%
 - Wipe all surfaces, put material under instruments as another barrier to microorganisms
 - Don't use 2% glutaraldehyde as a surface disinfectant due to caustic vapors and high cost
 - If exposed to agent squeeze entry wound to expel blood or contaminants, flush for 15 minutes
 - Wet vacuum preferred method for cleaning OR floor, mops least desirable
 - Mops must use EPA disinfectant or sodium hypochlorite 1:100
 - Must be washed every 24 hours
- Management of Infectious Waste (this segment of NAVEDTRA 14294A will be combined with BUMEDINST 6280.1A, Management of Infectious Waste due to similarity of subject material)
- Non-infectious waste
 - Treated as general waste
 - Examples: personal hygiene products, diapers, facial tissues, sanitary napkins, absorbant materials with little blood or body fluids
- Infectious Waste
 - Liquid or solid that contains pathogens in sufficient numbers or virulence to cause infectious disease
 - Sharps
 - Examples: hypodermic needles, syringes, scalpel blades, suture needles, Pasteur pipettes, specimen slides, cover slips, glass petri plates, broken glass
 - Microbiologic waste
 - Examples: cultures from laboratories, live vaccines, waste from production of biological
 - Liquid/semi-liquid
 - Examples: blood, semen, vaginal secretions, cerebrospinal fluid, pleural fluid, synovial fluid, pericardial fluid, amniotic fluid

- Pathological
 - Example: Medical items from isolation
- Segregation
 - Separate infectious waste from non-infectious waste at the source
 - Infectious waste placed in container with “Biohazard” and red in coloration
 - Container should be sufficiently thick, durable, puncture resistant with sufficient burst strength
 - Sharps should be placed in rigid, puncture resistant containers
 - Close before removal or replacement
 - Place in a second container (plastic bag or rigid box)
 - DO NOT transport in chutes or dumbwaiters
 - All anatomical waste should be placed in double wall corrugated boxes or an equivalent rigid container
 - Double lined with plastic bags
 - Ethical considerations
 - May mean disposed of differently (example: product of conception)
 - Blood (or other liquid)
 - Decanted in clinical sinks (empty containers are infectious waste)
 - Gelatinized
 - Bulk that can't be decanted or gelatinized will be put in double lined rigid containers for incineration
- Wear **PPE** when handling infectious waste
- Storage of infectious waste
 - Limit refrigeration to 7 days unless otherwise posted
 - Store near transport area
 - Store in rodent/insect proof container with BIOHAZARD label on it
 - Authorized personnel only
- Transportation of infectious Waste
 - In rigid, leak proof containers in accordance to local/state/federal law
- Treatment and Disposal of Infectious Waste

- Destroyed (incineration)
 - Inactivation (heat, chemical, or radiation means)
 - Sterilize prior to grinding
 - New treatment techniques must be approved by local
 - Evidence of efficiency is that it was successfully used elsewhere for at least 2 years
- Microbiological Infectious Waste:
 - Treatment: steam sterilize, chemical disinfected, incineration
 - Disposal: Sanitary Landfill
- Pathological Infectious Waste:
 - Treatment: incinerate, cremate
 - Disposal: Sanitary Landfill, burial
- Bulk Blood/Liquid Infectious Waste
 - Treatment: gelatinize
 - Disposal: sanitary sewer, sanitary landfill
- Sharps
 - Treatment: steam sterilize, incinerate
 - Disposal: sanitary landfill
- Sterilization:
 - 121 degrees C or 250 degrees F for 90 minutes, 15lbs per square inch guage pressure
 - Test weekly bacillus stearothermophilus
 - Chemical disinfecting best for liquids
 - Remaining ash goes to sanitary landfill
- Recording of Infectious Waste
 - Include: date, type of waste, amount, disposition, receiving facility if off site, receiving facility's documentation
- Training of Infectious Waste
 - People with occupational exposure need to be trained initially, annually, and supplementary
- Clean up of Infectious Waste

- Clean up immediately
- Wear PPE
- Place leaking/broken containers in new double lined containers
- Clean with EPA approved cleaner OR bleach 1:10 with water

Chapter 12: Fundamentals of Inpatient Care

Chapter 11 purposely skipped due to subject matter being extremely basic. Read through it if needed for the individual. Large portion of this chapter is skipped due to similar reasons.

- Topical Anesthesia
 - Administrated topically
- Local blocks
 - Subcutaneous infiltration
- Nerve block
 - Injecting agent into region of nerve trunk or large nerve branches
 - Blocks all impulses
- Spinal Anesthesia
 - Injecting agent into subarachnoid space between 3rd and 4th lumbar or 5th and sacral lumbar space
 - Blocks all impulses
 - Agent can move if patient's position changes
- Epidural Blocks
 - Injecting into the epidural space anywhere along the spine
- Saddle Block
 - Injecting agent between the 3rd and 4th dural sac
 - Blocks all impulses from the perineal area
- Caudal blocks
 - Injecting agent into sacral canal
 - Anesthetic effect or loss of sensation from the umbilicus to the toes
- General Anesthesia
 - Stage 1
 - Patient is dizzy, sense of unreality, reacts to noise
 - Stage 2
 - Excitement, delirium, vital signs show stimulation
 - Stage 3
 - Surgical or operative phase
 - Stage 4

- Toxic, danger state
 - Recovery stage
 - Patient awakens from anesthesia
- Casts
 - All casts should be made of fabric, not casts or rubbers
 - Needed: Webril or cotton bunting, plaster of paris, basin of tepid water, water source, protective linen, gloves, working surface, cast saw
 - Short arm cast
 - From metacarpal joints in hand to several inches below the AC space
 - Apply webril, then 2 – 3 layers of plaster of paris
 - Long arm cast
 - Elbow is maintained at a 90 degree angle
 - Begins at wrist to 2 inches below the axilla
 - Short leg cast
 - From toes to 2 inches below the knee
- Canes
 - Types: C-cane, straight handled cane, quad cane
 - Measure distance from wrist to floor when standing with arms at sides
 - Advance cane simultaneously with affected leg
- Crutches
 - Types: axillary and forearm crutches
 - Axilla should rest on crutch
 - 6 inch separation from feet when arms are at a 20 – 30 degree angle
- Walkers
 - Types: standard walker, wheelchair or rolling walkers, reciprocal walkers, one handed walkers, stair climbing walkers
 - Used to assist in walking, not continuously support patient's weight
 - First advance the walker, then the patient
- Stages of Death: Denial, Anger, Bargaining, Depression, Acceptance

Chapter 13: Nutrition and Diet Therapy

- BMI is calculated by dividing weight in kg (2.2lbs = 1kg) by height in meters squared
 - Normal BMI – 18.5 – 24.9
- BUMED 10110.6
 - Nutrition Standards and Education
- Nutrient
 - Substance that contributes to the growth or maintenance of the body
 - **Water is the most important nutrient**
 - Needed for every chemical reaction in the body
 - Males – 3.7, females – 2.7 needed
 - Water toxicity – 8 liters intake
 - Human body – 60% water
 - “Pints a pound the world around”
 - Water Soluble Vitamins: C, thiamin, riboflavin, niacin, B6, B12, folic acid, pantothenic acid, biotin
- Fiber
- Male – 37 grams, female – 25 grams
- Carbohydrates – 40 – 60% of a healthy diet
- There are 20 amino acids, 9 are essential
- Proteins
 - Made of amino acids
 - Support growth and maintenance of the body
 - Builds enzymes, hormones and antibodies to defend the body
 - Maintains fluid and electrolyte balance
 - 0.8g per kg per day
- Fat
 - Supplies energy
 - Calorically dense (9 calories per gram, twice that of proteins and carbohydrates)
 - Fat soluble vitamins: A, D, E, K
 - Consume 20 – 35% of caloric intake as fat
- Most common phospholipid is bile

- Major minerals
 - Calcium, phosphorous, magnesium, sodium, chloride, potassium, sulfur
- Trace Minerals
 - Iron, zinc, iodine, selenium, copper, manganese, fluoride, chromium, molybdenum
- Clear liquid diet
 - Can't last more than 2 – 3 days
- Calorie restricted diet
 - Can be no lower than 1200 calories
- Protein restricted diet
 - For patients with renal or hepatic disease
- Enteral nutrition
 - Feeding a patient through a tube into the GI tract
 - Done via an NG tube, Nasoduodenal (ND) tube or a narojejunal (NJ) tube
- Parenteral Nutrition
 - Patient doesn't have a functional GI tract
 - Feeding is done through an IV

Chapter 14: Physical Examinations

- Types of Physical Examinations
 - Entrance Exam
 - Considered a routine exam
 - Performed at MEPS. Recorded on:
 - DD 2808
 - Report of Medical Examination
 - DD 2807-1
 - Report of Medical History
 - DD 2697
 - VA Entitlement Form
 - Also used for separation
 - Separation Exam
 - Considered a routine exam
 - Not less than 180 days prior to separation
 - Processed through physical or medical evaluation board
 - Other 2 routine exams: PHA and Re-enlistment
 - Special Duty Physical Exam
 - Aviation, diving, psychological
 - Overseas/Operational Suitability Screening
- Occupational Health Medical Surveillance Examination
- Medical Evaluation Board (MEB) Examinations
 - Put patient on temporary limited duty
 - Refer patient to Physical Evaluation Board (PEB)
 - Done due to performance inhibiting condition, can't return to command, condition has limitations, member refuses medical or dental treatment
 - Abbreviated Temporary Limited Duty Medical Board and Report
 - Used when member is expected to return to full duty
 - Processing takes no longer than 5 days
 - Forms Used:
 - DD 2697

- Report of Medical Assessment
 - NAVMED 6100/5
 - Abbreviated Medical Evaluation Board Report
- NAVMED 1300/1
 - Medical and Dental Educational Suitability Screening for Service and Family Members
- Visual Acuity
 - Calculating vision
 - $V=d/D$ (d = distance in feet, D = distance the letters should be read)
 - Snellen Charts
 - Tests distance visual acuity
 - Perform test with and without corrective lenses
 - 20/20 line is 64 inches from floor, person stands 20 feet from chart
 - Jaeger Cards
 - Test near vision
 - Cards held 14 – 16 inches from person
 - J1 (smallest) to j6 (largest)
 - Armed Forces Vision Testing (AFVT)
 - Tests near and distant vision, depth perception, and horizontal and vertical phorias
 - Color Vision
 - Farnsworth Lantern Test (FALANT)
 - Colored lights, can be red, green or white in varying combinations
 - 9 out of 9 is best
 - Patient should wear corrective lenses for test
 - Pseudoisochromatic Plates (PIP)
 - Consists of colored plates
- Audiogram
 - Use an audiometer approved by the American National Standard Institute (ANSI)
 - DD 2215
 - Reference Audiogram

- DD 2216
 - Hearing Conservation Data

Chapter 15: Dental Examinations

- NAVMED 6600/3
- Dental Health Questionnaire
- Periodic Dental Examinations
 - Type 1
 - Comprehensive Examination
 - Examines hard and soft tissue
 - Type 2
 - Oral Examination
 - Type 3
 - Other Examinations
 - Consists of diagnostic procedure, observations, some physical examinations, emergencies, infections, trauma, defective restoration
 - Type 4
 - Screening Evaluation
 - Consists of mouth mirror and explorer/tongue depressor
 - Overseas screening, separation, retirement, special programs
- Forensic Examinations
 - Usually only done once
 - Done on back of chart
 - All teeth labeled
 - Missing teeth marked with an 'X'
 - Edentulous arch
 - X from 3rd molar to 3rd molar
 - Edentulous mouth
 - X from 3rd molar of maxilla to 3rd molar of mandible
 - Partially erupted tooth
 - Draw vertical arch through tooth
 - Amalgam Restoration
 - Draw outline of restoration

- Non-metallic Permanent Restoration
 - Filled and unfilled resins, glass ionomer cement, pit and fissure sealants
 - Gold restorations
 - Combination restorations
 - Removable partial dentures (RPD), complete dentures
 - Specify in 'remarks' section
 - Fixed Partial Dentures (FPD)
 - Post Crown
 - Root Canal Filling
 - Apicoectomy (Surgical removal of apex of tooth)
 - Deciduous teeth
 - Supernumerary teeth (extra teeth)
 - Drifted teeth
 - Temporary restoration
 - Remarks section
 - Soft tissue, occlusion, hard tissue (staining, torus(bony prominence)), rotated teeth, malposed (faulty position), other
- Current Status Form
 - Box 1
 - Dental caries, defective restoration, unerupted tooth, inclination of impacted teeth, extraction indicated, retained root, fractured tooth, periapical radiolucency, fistula, underfilled root canal, reabsorption of a root, periodontitis, alveolar reabsorption
 - Box 2
 - Missing teeth at the time of accession, treatment completed after
 - Box 3
 - Medical alert
 - Use red ink stamp
 - Box 4
 - Patient name, sponsor SSN

- Form EZ 603
 - Denal Evaluation Form
- EZ 603A
 - Dental Examination form
- DD 2808
 - Report of Medical Examination
- SF 513
 - Medical Consultation Sheet
 - To, from, date, reason, provisional diagnosis, doctor's signature, place of consultation, consultation report, patient ID

Chapter 16: Operative Dentistry

- Dental Specialties
 - Preventative Dentistry, Endodontics, Prosthetic Dentist, Oral and Maxofacial Surgery, Periodontics, Orthodontics
- Dental Instruments
 - Spoon Excavator
 - Double ended instrument with spoon and disk blade
 - Removes debris
 - Chisel
 - Used to cleave (split) tooth enamel, smooth cavity walls, sharpen cavity preparations
 - Wedelstaedts and biangle 2 most common types
 - Hatchet
 - Blade set, 45-90 degree angle
 - Used on wall of cavity preparation to cleave enamel and cut dentin
 - Hoe
 - Smoothes and shapes floor and sides of cavity
 - Gingival Margin Trimmers
 - Modified hatchets
 - Shape, smooth and trim gingival margin of a cavity
 - Amalgam Restoration Instruments
 - Transports amalgam material to cavity preparation
 - Condenser
 - Also known as a plugger
 - Used to condense and/or pack amalgam filling into cavity preparation
 - Carvers
 - Carves condensed amalgam to tooth structure
 - Burnisher
 - Smoothes and polishes cavity restoration
 - Composite Resin Instruments

- Used to transport and place dental cements, resins, temporaries, insulating, pulp cap materials
 - Spatula
 - Mixes restorative materials
 - Insulating Base Instruments
 - Used to mix, carry and place insulating bases
 - Rubber Dam Punch
 - Makes holes in rubber dam material
 - Rubber Dam Clamps
 - Applies rubber dams
 - Rubber Dam Forceps
 - Allows for adequate space for rubber dam placement
 - Rubber Dam Frame
- Composite resin is preferred for aesthetic appearance
- Glass ionomer best used when minimal tooth preparation is involved
- Flouride application
 - Brush, rinse, tray

Chapter 17: Radiology

Due to the lack of seeing questions pertaining to radiology on the exams this chapter is purposely abbreviated. See the full chapter in the Corpsman Manual if desired.

- X-ray discovered in 1895 by Wilhelm Conrad Roentgen
- Medical X-ray
 - Measured in wavelengths, X-rays are extremely short
 - They cause irritation of living cells and cause certain substances to glow
 - Density of the image is controlled with kilo-voltage (kVp), exposure time, milliamperage (mA) and target film distance (TFD)
- Radiation Safety
 - Subdivided into occupational and medical
 - Factors affecting exposure: time, shielding, distance
 - Patients should wear lead aprons and collars to protect reproductive and thyroid glands
 - Workers should be assigned Environmental Dosimetry Radiation Film Badge
 - Collected every 6-7 weeks
 - Log all x-rays taken
 - When stating reason for a retake, be specific on retake nature
 - Annual total dose limit 5 REM
- X-rays of wrist are the same for the hand, finger extension not required

Chapter 18: Pharmacy

- Pharmacognosy
 - Study of biological, biochemical and economic features of medication
- Pharmacy
 - Study of preparation, dispensing, and proper use of medicine
- Posology
 - Study of dosages
- Pharmacodynamics
 - Study of action or effects of medication
- Pharmacotherapeutics
 - Study of uses of medication to treat disease
- Toxicology
 - Study of poisons
- Blue Bible
 - Remington: The Science and Practice of Pharmacy
- Factors affecting dosage
 - Age, weight, sex, race, occupation, habitual use, time of administration, frequency of administration, mode of administration
- Young's Rule
 - Used to calculate pediatric doses based on age
 - $\text{Age in years} \div \text{age in years} + 12 \text{ times adult dose}$
- Clark's Rule
 - Used to calculate dose based on weight
 - $\text{Weight in pounds} \div 150 \text{ times adult dose}$
- Routes of medication administration
 - Oral
 - Most common route
 - Parental
 - IV, IM, subQ
 - Inhalation

- Vaporization, gas inhalation, nebulization
 - Topical
 - Local or systemic effect
 - Rectal
 - Preferred to oral if patient is vomiting
 - Vaginal
 - Local effect
- Rights of Medication Administration
 - Right Patient
 - Right Medication
 - Right Dose
 - Right Route
 - Right Time
 - Right Documentation
- Medication Classification
 - General
 - Grouped according to their source
 - Chemical
 - Grouped by the chemical characteristics
 - Therapeutic
 - Grouped according to their action in the body
 - Some medications fall in more than one category
- Medication Names
 - Chemical Name
 - Chemical and molecular structure
 - Generic Name
 - Often derived from the chemical name
 - Brand name
 - Property name given by manufacturers
- Medication Classes
 - Astringents

- Cause shrinkage of the skin and mucous membranes
 - Example: aluminum acetate solution, barow's solution, calamine, zinc oxide, glycerine, bentonite magma in calcium hydroxide
- Emollients
 - Bland or fatty substances that may be applied to skin to soften
 - Examples: theobroma oil, cocoa butter, petroleum, zinc oxide
- Expectorants and Antitussives
 - Aids in removal of secretions or exudates from bronchiols, trachea and lungs
 - Inhibits or suppresses coughing
 - Examples: Robitussin DM, AC
- Nasal decongestants
 - Reduces congestion and the swelling of mucous membranes
 - Examples: Sudafed, Actifed, Mucinex
- Antihistamines
 - Used to counteract the physical symptoms that are caused by histamines
 - Examples: Benadryl, Chlor Tremiton, Antivent Bonine, Dramamine
- Histamine H2 Receptor
 - Block histamines that cause gastric secretions in stomachs (ulcers)
 - Example: Tagamet, Zantac
- Antacids
 - Counteracts hyperacidity
 - Examples: Milk of Magnesia, Maalox
- Antiseptics
 - Used for prevention of infections by destroying bacteria or preventing their growth
 - Suppressant
 - Suppresses the growth of microorganisms
 - Example: Carbolic Acid, Isopropanol, Silver Nitrate
 - Disinfects
 - Used on inanimate objects

- Examples: Cidex, betadine
 - Germicides
 - Kills susceptible organisms
 - Example: Hydrogen Peroxide
- Sulfonamides
 - The first effective chemotherapeutic agents
 - Example: Boetrim, Septra, Silvadene Cream
- Penicillins
 - One of the most important antibiotics
- Cephalosporins
 - Group of semisynthetic derivatives of cephalosporin C, antimicrobial agent of fungal origin
 - Examples: Ancef, Keflex, Cefzil
- Tetracyclines
 - First truly broad-spectrum antibiotics
 - Best at mixed infections
 - Causes discoloration of the teeth
 - Don't take with milk
 - Examples: Achromycin, Sumycin, Vibramycin, Minocin
- Aminoglycoside
 - Inhibits protein synthesis
 - Examples: Garamycin, Nebcin, Mycefradin
- Macrolids
 - Large group of bacteriostatic agents that inhibit protein synthesis
 - Examples: Erythromycin, Clindamycin, Vancomycin, Azithromycin
- Antifungal
 - Inhibits or suppresses the growth and symptoms of fungi
 - Example: Flagyl, Vermox
- Antiparasitic
 - Agents that are destructive to parasites
- Antimalarial Preparations

- Used to treat or prevent malaria
 - Example: Chloroquine, Primaquin
- Laxatives
 - Facilitates the passage of feces through the colon
 - Example: mineral oil, lactulose, magnesium citrate, metamusal, ducosate calcium
- Diuretics
 - Increases the rate of urine production
 - Good for hypertension and congestive heart failure
 - Examples: hydrochlorothiazide, chlorthalidine, furoside, acetazolamide, triamterene
- Non-narcotic Analgesics
 - Relieves pain
 - Example: aspirin, Acetametophen, Naproxin, indomethocin
- Anti-pyretics
 - Relieves or reduces fevers
 - Example: intomethocin
- Anti-inflammatories
 - Reduces or suppresses inflammation
 - Example: Ibuprofen, Indomethocin, Meloxicam, Piroxicam
- CNS Stimulants
 - For narcolepsy, hyperkinesis, and ADD in children
 - Example: Methylphenidate Hydrochloride (Ritalin), Dextroamphetamine Sulfate
- CNS Depressants
 - Can range from a depressive action to mild sedation to deep coma
 - Used as sedative, anticonvulsant, anesthetics
 - Example: Phenobarbital (used in petite mal seizures), Phentobarbital (used in insomnia), phanytoin Sodium (Dilantin, used in grand mal seizures)
- Opium and Opium Alkaloids
 - Analgesics, cough sedative, Antiperistaltic (antidiarrhea),

- Examples: Morphine Sulfate, Codeine Sulfate, Miperidine Hydroshloride (Demerol)
 - Psychotherapeutic Agents
 - Includes tranquilizers and mood modifiers
 - Example: Chlorpromazine Hydrochloride, Thioridazine, Prochlorperizine
 - Skeletal Muscle Relaxants
 - Used primarily for muscle spasm
 - Example: Methocarbamol, Cyclobenzaprine
 - Cardiovascular Agents
 - Example: Digitoxine, Quinidine Sulfate, Amyl Nitrate, Nitroglycerine, Dipyridamole, Procaenamide Hydrochloride, Veropamil, Diltiazem
 - Vasoconstrictors
 - Produces constriction of the blood vessels with rise in blood pressure
 - Example: Epinephrine, Phanylphrine Hydrochloride, Oxymetazonline Hydrochloride
 - Anticoagulants
 - Delays or prevents blood coagulation
 - Example: Heparin Sodium, Warfarin Sodium
 - General Anesthetics
 - Example: Nitrous Oxide, Halothane, Ketamine Hydrochloride, Fentanyl, Droperidol, Procaine Hydrochloride
 - Local Anesthetics
 - Example: Lidocaine Hydrochloride, Dibucaine, Proparicaine
 - Oxytocins
 - Produces uterine contractions
- Vitamins
 - A, B1, B3, B6, B12, C, D, E, K
- **DD 1289**
 - Outpatient Prescription (for single medication)
- **Parts of a Prescription**
 - Superscription

- Rx, means ‘take’ or ‘take thou’
- Inscription
 - Lists the name and quantity of medication
 - Write the name generically and the amount medically
- Subscription
 - Gives directions to the compounder
- Signa
 - Gives directions to the patient
- You file all the prescriptions in 1 of 3 files
 - N File
 - Schedule II Narcotics
 - C File
 - Schedule III, IV, V controlled medications
 - General File
 - All others
- ALL prescriptions are kept on file for 2 years
- Controlled Substance Schedules
 - Schedule I
 - High abuse potential, no accepted medical use
 - Schedule II
 - High abuse potential, severe psychological or physical dependence liability
 - Can never be ordered with refills
 - Must be filled in 7 days
 - Schedule III
 - Less abuse potential than schedule II, moderate dependence liability
 - Must be filled within 30 days
 - May be refilled 5 times within 6 months
 - Schedule IV
 - Less abuse potential than III, limited dependence liability
 - Must be filled within 30 days

- Can be refilled 5 times within 6 months
- Schedule V
 - Limited abuse potential
- Schedule I and II medications require a vault or safe storage
- Schedule III, IV, and V medications require a locked cabinet
- All controlled substances must be inventoried quarterly

Chapter 19: Clinical Laboratory

- SF 545
 - Laboratory Report Display
- Capillary blood collection
 - Use middle or ring finger
 - Warm site
 - Always puncture away from the midline and not parallel to the grooves or lines of fingerprint
 - No greater than 2mm deep
 - WIPE AWAY first blood drop
 - DO NOT 'milk'
- Veinipuncture
 - Don't draw blood with IV fluid in it or on the same side of a mastectomy or while patient is standing
 - 15 – 30 degree angle
 - Don't leave tourniquette on for more than one minute
- Hemoglobin
 - Delivery and release of oxygen to tissues and facilitates CO₂ secretion
 - Grams per 100ml of blood: 12 – 16 for females, 14 – 18 for males
- Leukocytosis
 - Above normal value of leukocytes
 - Some causes: post partum, pregnant, appendicitis, ulcer, emotional stress, strenuous exercise
- Leukopenia
 - Below normal value of leukocytes
 - Some causes: severe or advanced bacteria infections, viral infections, protozoal infections, radiation
- Types of Leukocytes
 - Neutrophils
 - Largest percentage of leukocytes
 - Ingests invading bacteria

- Neutrophilic Band
 - Older, intermediate neutrophil
 - Segmented neutrophil
 - Mature neutrophil
 - Eosinophil
 - Destroys parasites and responds to allergic reactions
 - Basophil
 - Lowest percentage of leukocytes
 - Rise is associated with inflammatory disorders
 - Lymphocyte
 - Function associated with immune response and body's defense against viral infection
 - Monocyte
 - Largest white blood cell
 - Controls microbial and fungal infections
 - Removes damaged cells from body
- Bacterial Growth Requirements
 - Temperature
 - Psychrophilic, cold loving, less than 4 degrees C
 - Mesophilic, best at body temperature
 - Thermophilic, best at temperatures above 47 degrees C
 - Oxygen
 - Aerobes: need oxygen
 - Anaerobes: doesn't need oxygen
 - Nutrition
 - Moisture
- Bacterial Morphologic Characteristics
 - Coccus
 - Spherical
 - Bacillus
 - Rod shaped

- Spirochetes
 - Helical, spiral corkscrew shapes, spiral
- Gram Positive
 - Purplish, bluish
- Gram Negative
 - Pinkish
- Antigen
 - Any substance that when put into the body is recognized as foreign
- Antibodies
 - Specific defensive proteins produced when an antigen stimulates cells
- Antigen-Antibody Reaction
 - When antibodies bind with specific antigens
- Laboratory tests
 - Rapid Plasma Reagin (RPR) Card Test
 - Non specific test for syphilis
 - detects regain
 - developed 1 – 4 weeks after appearance of primary canchre
 - Reactive
 - Turns black against a white background
 - Nonreactive
 - Even light-gray color
 - Monospot Test
 - Two minute disposable test designed to detect the presence of infectious mononucleosis antibodies
 - Consists of specially prepared, stable sheep or horse erythrocyte antigen and guinea pig antigen
 - Positive
 - Is coagulation, clumpy
 - Random Urine Specimen
 - Most common
 - Good for detecting obvious abnormalities

- Least valid
 - First Morning Urine
 - Ideal screening specimen because of concentration
 - More likely to reveal abnormalities
 - 24 Hour Urine
 - Discard first void
 - Collect for next 24 hours
 - Empty bladder at 0800 next day
 - Refridgerate during collection
- Normal urine output
 - 600 – 1800ml
- Preservation of urine
 - Refridgeration
 - Preservatives
 - Hydrochloric acid
- Each urine sample needs to be at least 12 ml
- Urine Color Indications
 - Red or red-brown
 - Blood
 - Yellow-brown
 - Turns green with yellow foam when shaken
 - Presence of bile
 - Olive green or brown-black
 - Phenols
 - Dark orange
 - Pyridium
- Specific Gravity
 - Density of solution when copared to water
 - Normal for urine is 1.015 – 1.030
 - Measured with index refractometer
- Chemical Characteristics of Urine

- PH, protein, glucose, ketones, blood, bilirubin, urobilinogen, nitrate, leukocytes, specific gravity
- Measured using a reagent strip
- Microscopically examine at 40x
 - Bad findings
 - More than 3 leukocytes, RBCs, casts
- Critical Lab Results
 - WBC greater than 5,000
 - Acute infection
 - Hemoglobin below 7
 - Severe anemia
 - Glucose and ketones
 - Diabetes
- 10% of a ship's population is considered a walking blood bank

Chapter 20: Emergency Rescue Supplies, Equipment and Procedures

- Hospital Corpsman carries a medical equipment bag
 - Modular Lightweight Load Carrying Equipment (MOLLE) also known as a Stomp Bag
- Dressing
 - A sterile pad or compress used to control bleeding and prevent further contamination
 - Traditionally made of gauze or cotton
 - Should extend at least 1 inch from the wound in every direction
- Battle Dressing
 - A combination of a compress and a bandage
- Bandage
 - Used over sterile dressing for protection of wound and dressing
 - Traditionally made of gauze or muslin
- Bandage Application Techniques
 - Elbow
 - Spica or Figure 8
 - Hand, ankle, foot and wrist
 - Figure 8
 - Arm or leg
 - Spiral reverse bandage
 - Nose, chin and lower jaw
 - 4 tailed bandage
 - Lower jaw
 - Barton Bandage
 - Head
 - Triangular bandage, cravat bandage
 - Eye
 - Cravat bandage

- Most of the body
 - Triangular bandage
- Combat Application Tourniquet (CAT)
 - Occludes arterial flow to an extremity
 - Is self adhering and has a one-handed windlass
- Asherman Chest Seal
 - Used for tension pneumothorax
- IV fluids
 - Normal Saline 0.9
 - Used for patients who cannot take anything orally, for dehydration or hypovolemia
 - Rapid infusion can cause metabolic acidosis
 - Lactated Ringers
 - Used for fluid resuscitation
 - Not good for IV maintenance
 - Hetastarch (Hextend)
 - Plasma expander
 - Treats for shock
 - Do not exceed 1,000ml per day
- Oxygen Tanks
- American oxygen tanks color coded green, international color code is white
- When it is 200 psi or lower it is considered empty
- Never oil cylinder cap
- Extreme pressure contained in oxygen tank
- ‘O’ Ring
 - Structure on an oxygen tank to prevent leakage
- Oropharyngeal Airway
 - Use only on unconscious patients
 - Measure from corner of the mouth to the earlobe to get proper size
- Nasopharyngeal Airway
 - Measure from nasal opening to earlobe

- Use only water soluble lubricant
- When using suction:
 - Never push on throat or larynx
 - Never insert suction device farther than you can see it
 - Never suction for more than 15 seconds at a time
- OBA
 - Oxygen Breathing Apparatus
- SCBA
 - Self Contained Breathing Apparatus
 - Uses oxygen
 - Life 20-45 minutes
- Hose (Air Line) Mask
 - Uses air instead of oxygen
 - Never attach oxygen
 - Preferred when there may be flammable vapors
 - Safety belt with lifeline must be worn with it
- Lifeline
 - 50 foot steel-wire cable
- Phases of Rescue Operations
 - 1st Phase
 - Remove lightly pinned patients
 - 2nd Phase
 - Remove casualties in more difficult circumstances
 - 3rd Phase
 - Remove casualties where removal is difficult and time consuming
 - 4th Phase
 - Removal of dead bodies
- Stages of Extrication
 - 1st Stage
 - Gaining Access to the casualty
 - 2nd Stage

- Giving lifesaving care
 - 3rd Stage
 - Disentanglement
 - 4th Stage
 - Preparing the casualty for removal
 - 5th stage
 - Removing the casualty
- When rescuing patients from a void get the Damage Control to clear the area first
- Stretchers and Boards
 - Stokes Stretcher
 - Most commonly used
 - Wire basket with iron rods
 - Can be used with floatation devices
 - Kendrick Extrication Device (KED)
 - Used to support minor neck and back injuries
 - Spine Board
 - Provides full body immobilization
 - Used to support major neck and back injuries
 - Miller Board
 - Provides full body immobilization
 - Fits into the Stokes Stretcher
 - Floats
- One Rescuer Techniques
 - Fireman's Carry
 - One of the easiest ways to carry a casualty
 - Pack-strap Carry
 - Possible to carry a casualty heavier than the rescuer
 - Arm Carry
 - Use only if patient is smaller than the rescuer
 - Don't use if patient is badly injured
 - Blanket Drag

- Can also be considered Clothes Drag
 - Tie Hands Crawl
 - Useful for going under low structures
 - Least desirable due to lack of head support
- Enroute Care
 - Ambulance
 - Typically used in a non-tactical situation
 - Tactical Care
 - Care Under Fire
 - Provided while direct threat exists
 - Goal is to move patient out of line of fire
 - Apply tourniquet if necessary
 - Tactical Field Care
 - Done in a tactically unstable environment
 - Rescuer can perform initial evaluation
 - Request Medical Evacuation
 - Use the 9-Line CASEVAC
 - Numbers 6-9 are done while rescue vehicle is enroute
 - 1 – Location
 - 2 – Radio frequency, call sign, suffix
 - 3 – Number of patients by precedence
 - 4 – Special Equipment required
 - A – None
 - B – Hoist
 - C – Extration Equipment
 - D – Ventilator
 - 5 – Number of patients
 - A – Litter needed
 - B – Ambulatory
 - 6 – Security at pickup site
 - N – No enemy troops in area

- P – Possible enemy troops in area
- E – Enemy troops in area
- X – Enemy troops in area, armed escort required
- In peacetime, 6 indicates the number and types of wounds and injuries
- 7 – Method of Marking Site
 - A – Panels
 - B – Pyrotechnic signal
 - C – Smoke Signal
 - D – None
 - E – Other
- 8 – Patient Nationality and Status
 - A – US Military
 - B – US Civilian
 - C – Non US Military
 - D – Non US Civilian
 - E - EPW
- 9 – NBC Contamination at site
 - In peacetime, 9 is the terrain description
- Loading Site
 - Must be at least 30 meters in diameter with no more than 15 degree slope
- HAZMAT Type with Label Description
 - Explosives – Solid Orange
 - Flammable Liquids – Solid Red
 - Oxidizers, Peroxides – Solid Yellow
 - Radioactive – Half White, Half Yellow, Black radioactive symbol
 - Corrosives – Half White, Half Black
 - Non-Flammable Gas – Solid Green
 - Flammable Solids – Red and White stripes
 - Poisons, Biohazards – Solid white

- National Fire Protection Association (NFPA)
 - Developed NFPA 704 Labeling System to indicate health, flammability and reactivity hazards of chemicals
 - Diamond shaped sign consisting of 4 squares, each with a color and/or number concerning the chemical
 - Red – Flammability
 - Yellow – Reactivity
 - White – Special Hazards
 - Blue – Health Hazards
 - 4 – Deadly
 - 3 – Extreme Danger
 - 2 – Hazardous
 - 1 – Slightly Hazardous
 - 0 – Normal material
- Protection Levels
 - Required during a hazardous circumstance
 - Not to be confused with MOPP levels
 - Level A
 - Positive pressure demand, SCBA, fully encapsulating chemical resistant suit, inner chemical resistant gloves, 2 way radio
 - Level B
 - Positive pressure demand, SCBA, Chemical resistant clothing, boots, gloves and hat, 2 way communication
 - Level C
 - Full face piece air purifying canister equipped with respirator, chemical resistant clothing, boots, gloves and hat
 - Level D
 - Coveralls, safety boots and shoes, safety glasses or goggles, hard hat
- HAZMAT Site Control
 - Exclusion Zone
 - The ‘hot’ zone

- Area of contamination
 - Boundary should be marked
 - Remain upwind
- Contamination Reduction Zone
 - The 'warm' zone
 - Transition area between contaminated and clean
 - Decontamination takes place here
- Support Zone
 - Safe zone
 - Location of the administration and other support functions
 - Command post here
- Decontamination
 - The process of removing/neutralizing and properly disposing of contaminants
 - Processes:
 - Dilution
 - Flushing with water
 - Most frequent appropriate method
 - Flush for 20 minutes
 - Absorption
 - Use of special filters and/or chemicals to absorb contaminants
 - Neutralize
 - The use of chemical washes
 - Disposal and isolation
 - Only to be used with inanimate materials

Chapter 21: Emergency Medical Care Procedures

Details concerning the particular steps pertaining to the assessment of each type of injury or condition is abbreviated to questions specifically remembered from the tests of the author and others. You can reference the Hospital Corpsman Manual for details if desired.

- Non-Tactical Triage
 - Priority I
 - Immediate
 - Red
 - Injuries are critical but require minimal time or equipment to manage
 - Example: compromised airway, massive external hemorrhage
 - Priority II
 - Delayed
 - Yellow
 - Injuries are debilitating but don't require immediate care to save life or limb
 - Example: long bone fracture
 - Priority III
 - Minor
 - Green
 - Walking wounded, minor injuries
 - Can assist in comfort/care of other patients
 - Priority IV
 - Expectant
 - Injuries so severe that there is a minimal chance of survival
 - Priority V
 - Dead
 - Black
- Tactical Triage
 - Priority I
 - Immediate
 - Requires lifesaving emergency surgery

- Example: upper airway obstruction, respiratory distress, tension pneumothorax, life threatening bleeding, decompensated shock
 - Priority II
 - Delayed
 - Requires time-consuming surgery but condition permits delay
 - Example: compensated shock, heavy bleeding under control with tourniquet, injury that is compromising circulation, penetrating wound that is not compromising airway or breathing
 - Priority III
 - Minor
 - Walking wounded, minor injuries
 - Priority IV
 - Expectant
- Airway Management
- Suctioning
 - Rigid Tip Suction
 - Only insert as far as you can see it
 - Never suction for more than 15 seconds at a time
- Oropharyngeal Airway
 - Never use on conscious patient
 - Measure from corner of mouth to ear
 - If oral airway is difficult to insert you may use gauze to pull the tongue forward or a tongue depressor to depress it
- Nasopharyngeal Airway
 - Measure from nose to ear
 - Don't use petroleum or non-water based lubricant
 - Never force a nasopharyngeal airway, if an obstruction is felt remove and rotate or try other nostril
 - Most nasopharyngeal airways are designed for right nostril
- Combitube
 - Insert until black rings are against patient's teeth

- Inflate blue and white cuff
- Cricothyroidotomy
 - Indications: total upper airway obstruction, inhalation burns, massive maxofacial trauma
 - Find cricothyroid membrane by feeling the thyroid cartilage (adam's apple) and sliding finger down to cricoid cartilage
 - Cricoid membrane between thyroid and cricoids cartilage
 - Cut 1/5 inch vertical incision into cricoid membrane
 - Use a hook, needle or improvised device to keep opening open
 - Insert ET tube and stabilize
- Needle Chest Decompression
 - Indicated for pneumothorax or tension pneumothorax and is causing increasing respiratory distress
 - Locate 2nd intercostals space at midclavicular line
 - Use large bore (3.25 inch, 14 guage) needle catheter
 - Insert along the bottom of the rib until pop is heard, respirations should improve almost immediately
 - Secure catheter, repeat as needed
- Oxygen
- Oxygen cylinders color coded green
- If 200 psi should be replaced
- Oxygen mask
- 10 – 15 liters per minute, up to 90%
- Nasal Canula
- 1 – 4 liters per minute, up to 24 – 44%
- Shock
 - Inadequate tissue perfusion
 - Hypovolemic Shock
 - Also known as Hemorrhagic Shock
 - Loss of blood volume
 - Cool, clammy, pale cyanotic skin, low BP, altered consciousness

- Distributive Shock
 - Also known as Vasogenic shock
 - Vascular container dilates without a proportional increase in blood volume
 - Neurogenic shock
 - Failure of nervous system to control blood vessels
 - Warm, dry, pink skin
 - Septic Shock
 - Severe infection that leads to vasodilation
 - Cool, clammy, pale, mottled skin. Altered consciousness
 - Psychogenic (vasovagal) shock
 - Occurs through parasympathetic nervous system, is generally brief
 - Cool, clammy, pale skin
- Cardiogenic Shock
 - Heart failing to pump blood adequately
 - Cool, clammy, pale cyanotic skin. BP drops, consciousness altered
- Stages of Shock
 - Compensated (non progressive)
 - BP is maintained, narrowing pulse pressure
 - Good chance of recovery with treatment
 - Decompensated (progressive)
 - BP is falling, blood volume dropped 15 – 25%
 - Treatment sometimes has recovery
 - Irreversible
 - Terminal stage
 - Treatment normally doesn't result in recovery
- The brain can go 4 – 6 minutes without oxygen before permanent damage occurs
- Death from massive hemorrhage can occur in 2 minutes
- Classifications of Hemorrhagic Shock
 - Class I
 - Loss: less than 750ml, 15% of blood volume

- Heart rate may be increased, cool skin
 - Class II
 - Loss: 750–1,500ml, 15–30% of blood volume
 - Thread pulse, respiratory rate 20-30, pale cool moist skin, anxious
 - Class III
 - Loss: 1,500-2,000ml, 20-40% of blood volume
 - Thread weak pulse, respiratory rate 30-40, cool white extremities, ashen skin, anxious and confused
 - Class IV
 - Loss: greater than 2,000ml, over 40% of blood volume
 - No radial pulse, weak carotid pulse, respiratory rate over 35, white/ashen cyanotic skin, cold extremities, lethargic or unconscious
- Septic Shock – takes 5-7 days to develop
- Cardiogenic Shock
 - Intrinsic cause
 - Myocardial Infarction (MI)
 - Most common in men 50-60 years old
 - Abnormal pulse, chest pain, shortness of breath, nausea and vomiting
 - Extrinsic cause
 - Tension pneumothorax, chest trauma
 - Shortness of breath, dyspnea, tachycardia, cyanosis, jugular vein distension
- IV fluids administered in the field are beneficial when:
 - Patient is bleeding at 25-100ml a minute and IV administration is equal to that
 - Scene time and transport time exceed 30 minutes
- Cerebrovascular Accident (CVA)
 - Stroke
 - Blood clot within the brain
 - Sudden weakness or paralysis in one side of the body, facial muscles may be involved, vision and speech affected

- Syncope
 - Fainting
- High priority conditions that require immediate transport
 - Poor general impression, unresponsive, responsive but not following commands, dyspnea, shock, complicated childbirth, chest pain with low systolic pressure, uncontrolled bleeding, severe pain
- When activated charcoal is counter-indicated
 - Patient has altered mental status, swallowed acids or alkalis
- Activated charcoal dose
 - 25-50g for adult, 12.2-25g for child
 - Generally 1g for every kg of body weight
- Diabetic Ketoacidosis
 - Too much sugar in the blood
 - Progresses slowly
 - Often mistaken for intoxication
 - Generally occurs when a diabetic forgot to take their insulin or took too little
 - CNS depression (confusion, disorientation), BP falls, rapid weak pulse, sickly sweet breath
- Insulin Shock
 - Too little sugar in the blood
 - Brain damage develops quickly
 - Pale moist skin, dizziness, headache, strong rapid pulse, fainting, seizures, coma
 - If unsure whether patient has Diabetic Ketoacidosis or Insulin Shock, treat for Insulin Shock due to its deadliness
 - Treat with sugar cubes or oral glucose
- Brain injury indications
 - Variation in pupil size, failure for pupils to constrict properly, progressive loss of strength, cerebrospinal fluid leakage from ears
 - Nothing by mouth
- Chest Injuries

- Difficulty breathing without signs of airway obstruction, sucking chest wound most serious, failure of one side of the chest rising, enlarged neck veins, tracheal deviation (late sign), tachypnea
- Flail chest
 - One portion of the chest fails to rise
- 2 or more ribs fractured in 2 or more places, fractured sternum
- Hemothorax
 - Bleeding into the chest cavity
- Abdominal wounds
 - Intense pain, nausea, vomiting, spasm of abdominal muscles, severe shock
 - Immediate surgical treatment required
 - Do not apply pressure to the wound
- Analgesics on the battlefield
 - Combatant carries
 - If still able to fight
 - Mobic 18mg PO 1 a day, Tylenol 650mg PO every 8 hours
 - If unable to fight
 - Oral Transmucosal Fentanyl Citrate 800ug transbuccally
 - Tape onto casualty's finger
 - Corpsman carries
 - Morphine Sulfate 5mg IV/IO, Promethazine 25mg IV/IO, Moxifloxacin 400mg PO
- Morphine
 - Adult dose = 10-20mg every 4 hours
 - Respiratory depressant, increases intracranial pressure, causes constriction of pupils, vasodilator, mental confusion, highly addictive
- Laceration
 - Torn wounds
 - Ragged irregular edges
 - Masses of torn tissue underneath
 - Do not try to suture

- Puncture
 - Caused by objects that penetrate into tissues
 - Small surface opening
 - Do not remove object, secure/pad it
- Avulsions
 - Tearing away of tissue from a body part
 - Heavy bleeding
 - Wrap tissue in sterile dressing
- Amputations
 - Non-surgical removal of a limb
 - Wrap limb in sterile dressing and place on ice
- Hemorrhage
 - Massive bleeding
 - Apply pressure
 - If bleeding is on an extremity and nonresponsive to pressure it can be treated with tourniquet
 - Apply 2-3 inches above wound
 - Mark 'T' on patient's forehead with time of application
 - Combat Gauze can be used for hemorrhages on non-extremities
- Indications of soft tissue injuries
 - Hematemesis, hemoptysis, melena (black tarry stool), hematochezia (bright red blood from rectum), hematuria, nonmenstrual vaginal bleeding, epistaxis, ecchymosis
 - Nonreversible: pale moist clammy skin, low temperature, rapid feeble pulse, falling BP, dilated slow reacting pupils, tinnitus, syncope, dehydration, thirst, yawning, air hunger, anxiety, feeling of impending doom
- Contraindications to closing a wound
 - Reddening and edema of wound margins, infection manifested by discharge of pus, persistent fever or toxemia, puncture wound, large gaping wound, animal bites, wound is deep
- Sutures

- Non absorbable
 - Silk
 - Reacts with tissue
 - Can be 'spit' from the wound
 - Cotton
 - Loses tensile strength with autoclaving
 - Linen
 - Better than silk or cotton but more expensive
 - Synthetic (nylon, dermalon)
 - Excellent for surface use
 - Little skin reaction
 - Tendency for knots to become untied
 - Rust-proof Metal
 - Least tissue reaction
 - Strongest
 - More difficult to use
 - Leave in for 10-14 days
- Absorbable Sutures
 - Catgut
 - Made of sheep intestine
 - A-Plain = absorbs in 10 days
 - B-Mild = absorbs in 20 days
 - C-Medium = absorbs in 30 days
 - D-Extra = absorbs in 40 days
- Suture Time
 - Face = 4-5 days
 - Body and Scalp = 7 days
 - Soles of feet, palms of hands, back, joints = 10 days
- Characteristics of suture needles
 - Size, taper point, cutting edge point, atraumatic

- Xylocaine
 - Most common anesthetic
 - Never use on fingers, toes, ears, nose or small appendage
 - Maximum recommended amount = 50ml for a 1% solution
- Broken Bones
 - Unless necessary DO NOT attempt to straighten it
 - If leg is broken do not move casualty until splint is applied
 - Broken bone at elbow
 - Don't try to straighten or move it unless there's no distal pulse, then give gentle traction until pulse is felt
 - Broken Femur
 - Outer splint for femur
 - Goes from armpit to foot, tie to body at 5 points
 - Best femur splint
 - Hare and Thomas Half ring traction
 - Best forearm and lower leg splint
 - Pneumonic splint
 - Knee fracture
 - Straighten it
 - Splint with padded board at least 4 inches wide from buttock to foot
 - Tie to body at least 4 times
 - Broken clavicle
 - One shoulder is lower than the other
 - Arm sling
 - Broken rib
 - Localized pain at fracture site with possible deformity
 - Do not tape or wrap
 - If mobilization is needed swath arm to chest
 - Skull Fractures
 - DO NOT give patient medications

- May be bruise or bleeding, unequal pupil size, not properly reactive to light, may be CSF fluid leakage, parts of body or face may be paralyzed or unreactive, may be pale or unusually flushed
 - Headache, dizzy, light headed, anxious or confused, unconscious, vomit
 - Spinal fractures
 - DO NOT move patient unless absolutely necessary
 - Pain, shock, paralysis
 - Minimize shock, prevent further injury
 - Pelvic Fracture
 - DO NOT move patient unless absolutely necessary
 - Severe pain, shock, loss of ability to use lower part of the body
- Joint and muscle injuries
 - Dislocation
 - Rapid swelling, discoloration, loss of ability to move joint, severe pain, muscle spasms
 - Possible numbness, loss of pulse and shock
 - Make patient comfortable, treat for shock
 - Do not attempt to reduce (put joint back into place) unless unable to get to a doctor within 8 hours
 - Never attempt to reduce serious dislocations (example: femur)
 - Finger
 - Attempt to relocate by gentle pulling and straightening, do not try more than 3 times
 - Shoulder
 - Place foot on armpit and apply gentle increasing traction
 - Flex elbow, apply traction at elbow, rotate slightly
 - Do not try more than 3 times
- Sprain
 - Injury to ligaments and soft tissue that support a joint
 - Violent wrenching or twisting of a joint beyond normal limits, involves a temporary dislocation

- Pain and/or pressure at joint, pain with movement, swelling, tenderness, possible loss of movement, discoloration
 - Cold packs first 24-48 hours, elevation, snug bandage, after swelling stops apply heat (minimum 24 hours after last cold pack)
 - Strain
 - Injuries caused by forcible overstretching or tearing of muscles or tendons, pulls muscles beyond normal limits
 - Pain, tenderness, stiffness, swelling, discoloration, possible loss of power, distinct gap felt at site
 - Elevate, rest, cold packs 24 – 48 hours, after swelling stops apply heat (minimum 24 hours after last cold pack)
- Eye injuries
 - Foreign body that can't be removed
 - Bandage both eyes unless in a tactical situation, then just the affected eye
 - Impaled eye
 - Do not remove
 - Cover with paper cup or cone, cover uninjured eye
- Crush syndrome
 - Caused by large weight on core of body for an extended period
 - Ischemia, muscle damage
 - Can cause efflux of potassium, nephrotoxic metabolites, myoglobin, purines, phosphorus
 - Causes cardiac and renal dysfunction
 - Extremities
 - Initially fine, then edema, swelling, cool, tense, severe pain, paralysis
- Burns
 - 1st Degree
 - Epidermal layer is burned
 - Skin is pink or red
 - Sensitive, mild to severe pain
 - Heals within a week

- 2nd Degree
 - Some of dermal layer is burned
 - Epidermal blisters, mottled appearance
 - Painful, weeping
 - 2-3 weeks healing time
 - 3rd Degree
 - Full thickness burn
 - White to black
 - No pain except at borders
- Rule of Nines
 - For the chart and numbers per body part, see Corpsman Manual
 - Can be of greater importance of evaluating seriousness of the burn than the actual depth
 - Example: 1st degree burn over 50% over body more severe than 3rd degree burn over 5%
- Treatment
 - Remove jewelry and clothing unless it adheres to the wounds
 - Cover with dry sheet or dressing, give IV therapy (lactated ringers)
 - Pain relief: cool wet compress, ice water immersion
 - If evacuation is delayed for days you may start topical anesthetic after patient stabilizes, give wound care
 - Apply 1/16 thickness silvadene cream
- Electrical Burn
 - Ensure patient is no longer in contact with electricity
 - Burn may be more serious than it appears due to electricity's ability to travel through tissue and leave an 'exit wound'
- Chemical Burn
 - Most often affects the extremities, mouth and eyes
 - Alkali burns are more serious than acid burns due to the burn being deeper and longer
 - Flush with large amounts of water

- Flush while clothing is being removed
 - For Dry Lime burns (alkali) brush away, no water flushing
 - For Phenols (carbolic acid) burns, wash with alcohol, not water
 - Do not apply the 2 above to burns of the eye
 - Neutralizing chemical burns after flushing
 - Acid: 1-2tsp baking soda in 1 pint of water
 - Alkali: 1-2tsp vinegar in 1 pint of water
- White Phosphorous Burns
 - Also known as WP or White Peter
 - Superficial skin burn, burning clothes
 - Treat as thermal burn
 - Remove particles during flushing quickly and gently
 - Deeply imbedded particles you cover with saline soaked dressing (keep it wet)
 - You can flush with 1% solution copper sulfate to turn particles blue-black followed by saline flush to aid in removal
- Heat Injuries
 - Prevention of heat injuries
 - Don't use salt tablets in water
 - Stay out of the heat
 - Don't drink alcohol
 - Drink plenty of water
 - Heat Cramps
 - Excessive sweating results in cramps in muscle
 - Move to cool place, give cool water with 1tsp salt per liter
 - Heat Exhaustion
 - Most common heat condition
 - Serious disturbance in blood flow to the brain, heart and lungs
 - Weakness, dizziness, headache, nausea, loss of appetite
 - Skin gray cool moist clammy, vital signs normal, body temperature low

- Move to cool place, loosen clothing, apply cool wet cloths to the groin, axilla and neck
 - Don't allow casualty to become chilled
 - Give 1tsp salt in 1 liter of cool water, give IV lactated ringers
 - Heat Stroke
 - Less common though more serious. 20% mortality
 - High body temperature (greater than 105 degrees F or 41 degrees C)
 - Breakdown of sweating mechanism, unable to eliminate body heat
 - If the temperature gets too high then it damages the brain, kidney and liver
 - Dizziness, headache, nausea, weakness, deep rapid breathing at first, then shallow and nearly absent
 - Pinpoint pupils, fast, strong pulse
 - Douse with cold water, move to cool place, remove clothing, raise head and shoulders, apply cold packs or cold water immersion
 - Discontinue cooling once core temperature reaches 102 degrees F
 - Recheck temperature every 10 minutes
- Cold injuries
 - Hypothermia
 - General cooling of the body
 - Shivering, listlessness, indifference, drowsiness, unconsciousness
 - Glassy stare in the eyes, deep shallow respirations, weak or absent pulse
 - Death occurs at core temperature of 80 degrees F
 - Re-warm ASAP
 - Immerse in 100-105 degrees F/38-41 degrees C
 - Prevent re-warming shock by warming the trunk first
 - Chillblain
 - Mild cold injury
 - Occurs at temperatures 32-60 degrees F/0-16 degrees C
 - Redness, swelling, tingling, pain
 - Re-warm and keep dry

- Immersion Foot
 - Wet cold temperature from 50 degrees F/10 degrees C to freezing
 - Tingling, numbness, swelling, bluish discoloration, painful blisters
 - Do not pop blisters
 - Remove clothing, re-warm, keep dry
- Frostbite
 - When ice crystals form in the flesh
 - Yellow-white or mottled blue-white skin, cold, hard and insensitive to the touch
 - Superficial Frostbite
 - Superficial skin feels hard, deeper tissues feel soft
 - Re-warm area:
 - Buddy heat, warm water immersion, hot water bottles
 - NEVER rub
 - Deep Frostbite
 - DO NOT thaw if there is a chance of it re-freezing
 - Immerse in 100-105 degrees F/38-41 degrees C, when thawed pat dry
 - Blisters may develop
 - DO NOT pop
 - Put no pressure or friction on the injury, keep dry
 - It will swell, sting and burn as it thaws
 - Ensure patient rests, affected area is elevated, give whirlpool bath daily 98.6 degrees F with soap
- Cassions Disease
 - Also known as the 'Bends'
 - Reaction from going from high-pressure to lower pressure too quickly
 - Most commonly divers (going from deeper depths to more shallow depths too quickly)
 - Dizziness, difficulty breathing, sharp pains in joints and abdomen

Chapter 22: Poisoning and Drug Abuse

- Poison
 - A substance that, when introduced into the body, produces a harmful effect on normal body structures or functions
 - Can be solid, liquid or gas
 - Can be ingested, inhaled, absorbed, injected
 - Assessment and treatment of the patient is more important than identifying the specific poison
 - Less than 5% of poisons have an antidote
 - All patients should receive glucose, thiamine, naloxone and possibly oxygen
- Steps in evaluating and poison management
 - Stabilization and evaluation
 - Continued care and disposition
 - Treatment
 - Ingested poisons
 - Emetic, gastric lavage followed by absorption, cathartic
 - Inhaled Poisons
 - Administer oxygen
 - Absorbed poisons
 - Removal of poison by cleansing the skin
 - Injected poison
 - Antidotal medications recommended
- Prevention or limitation of poison enhancement
 - Elimination enhancement or absorption
- Ingested Poison
 - Most common route of poisoning
 - Can have an irritant, acidic (corrosive) or basic (caustic) effect
 - Non-corrosives
 - Example: arsenic, copper, iodine, mercury, phosphorous, silver nitrate, zinc
 - Nausea, vomiting, convulsions, abdominal pain

- Complaints of strange taste, lips tongue and mouth look different
- Drink 1-2 glasses of water or milk
- Empty somach
 - Emetic, gastric lavage, absorption, cathartic
 - Emetic preferred
 - Ipecac syrup most common emetic
 - Doses = adult 15-30ml, child 15ml
 - Follow emetic with glass of water
 - Patient should vomit within 30 minutes
 - Gastric Lavage
 - Use only after emetic has failed
 - Insert NG tube into stomach through mouth, use 100ml of normal saline then aspirate
 - Continue until fluid returns clear
 - Activated charcoal
 - Absorbs poison
 - Cathartic
 - Speeds the movement of the poison
- Corrosives
 - Acids and alkalis do actual chemical burning
 - Acids
 - Does most of its damage in the stomach
 - Alkalis
 - Does most of its damage in the soft tissues in the mouth, throat, esophagus
 - Look for stains and burns around the mouth, characteristic odor, abdomen is tender, swollen
 - Stridor is heard if poison was inhaled
 - Only give water
 - No emetic, no gastric lavage
- Irritants

- Example: detergents, ammonia
 - Produces local irritation with mild chemical burns
 - Only give water
- Petroleum Distillates or Hydrocarbons
 - Example: kerosene, gasoline, turpentine
 - Causes severe chemical pneumonia and toxic effects
 - Abdominal pain, choking, gasping, vomiting, fever, characteristic odor
 - No emetic
 - Give 30-60ml vegetable oil if no physician is present
- Inhaled Poisons
 - Most gasses cause shortness of breath, coughing, cyanosis
 - Cardiac arrest and hypoxia will follow if not treated
 - Give oxygen
 - Remove patient from toxic area
 - Never try to rescue a patient from a toxic environment without proper protective gear
 - Olfactory Fatigue
 - After a few minutes, an odor is no longer detectable
 - Can 'fool' people into believing the poison is gone
 - Carbon monoxide is the most common agent of inhaled gas poisoning
 - Has no odor or taste, gives little warning
 - Slight dizziness, weakness and headache
- Absorbed Poisons
 - Injected Poisons and Envenomations
 - Stings from bees, wasps, ants
 - Rarely fatal
 - Remove stinger by scraping skin with a dull knife
 - Put ice or analgesic cream on it
 - If allergic reaction occurs administer 1:1000 epinephrine
 - 0.5ml for adult, 0.1-0.3ml for child
 - Scorpion stings

- 40 species in North America, Bark Scorpion in Mexico and Southwest most severe in country. Most dangerous are in North Africa and India
- Pain, swelling, skin discoloration, itching at site, pins and needles, nausea
- Does not last over 24 hours
- Apply ice and elevate site
- Spider bites
 - Black widow
 - Identified by red hourglass on abdomen
 - Dull, numbing pain that spreads to torso
 - Progresses to severe pain, rigidity of abdominal muscles
 - Nausea, vomiting, headache, dizziness, dyspnea, edema, rash, hypertension, anxiety
 - Bite hard to locate due to lack of swelling and discoloration
 - Put ice on bite, elevate, hospitalize, administer antivenom
 - Brown Recluse
 - Identified by ‘violin’ on abdomen
 - Bleb appears on bite site within hours
 - Restlessness, fever, chills, nausea, vomiting, pain, shock, eventual necrotic lesion
 - Debride lesion, apply polymyxin bacitracin neomycin ointment, sterile dressing, antibiotics
- Snake Bite
 - Identify snake
 - Consider all snakes poisonous
 - Identify bite
 - Pain, swelling, bleeding, rapid pulse, labored breathing, progressive weakness, dim or blurred vision, nausea, vomiting, drowsiness

- Suction is only beneficial in the first 3 minutes
- DO NOT
 - Apply ice, apply tourniquet, suck on wound with your mouth, make any cuts/incisions in the wound, give patient alcohol or narcotics
- Gently wash wound, put on IV, monitor, administer antivenom if an option
- Nothing by mouth but water, apply bandage 2-4 inches above bite
- DO NOT elevate bite
- Observe for the next 24 hours
- Poisonous Fish
 - Puffer Fish, Trigger Fish, Parrot Fish, Porcupine Fish, File Fish, Surgeon Fish, Surmullet/Goat Fish
 - Severe pain at site, numbness or hypersensitivity, cyanotic, swelling
 - Nausea, vomiting, sweating, mild fever, respiratory distress, collapse
 - Remove spine or sheath, rinse with cold saltwater, then soak in hot water for 30-90 minutes
 - Can administer xylocaine WITHOUT epinephrine for pain
 - Stonefish, Zebrafish, Scorpionfish
 - More toxic
 - Symptoms similar to other fish but pain is more severe and lasts for days
 - Stonefish antivenom can be used for all poisonous fish
- Coelenterates
 - Portugese Man-of-War, Sea Wasp (Box Jellyfish), Sea Nettle, Sea Blubber, Sea Anemone, Rosy Anemone
 - Sea Wasp (Box Jellyfish) and Portugese Man-of-War can cause death within 10 minutes

- Avoid stings by swimming around tentacles/stingers and wearing a wetsuit
 - Remove tentacles gently with towel or clothing
 - Rinse with vinegar or 3-10% acetic acid
- Drug Abuse
 - CNS Depressants
 - Opium and Opium Alkaloids
 - Most effective and common pain medication, highly addictive
 - Opium, morphine, heroine, methadone (Heroine most popular, no real use)
 - Abuse: coma, respiratory depression/arrest, dizziness, lethargy, needle scars
 - Withdrawl: wildly disturbed, restless, agitated, hallucinations
 - Start hours after last dose, peak at 72 hours
 - Alcohol
 - Most widely used drug, highly addictive
 - Withdrawl: severe agitation, anxiety, confusion, sweating, profound depression, delirium tremens (medical emergency), tremors, tachycardia, hypertension, stroke
 - More likely to **die** with alcohol withdrawal than with any narcotic
 - Barbituates
 - Highly addictive
 - Withdrawl: (is LIFE THREATENING) anxiety, insomnia, muscle tremors, loss of appetite, convulsion, delirium, death
 - CNS Stimulants
 - Amphetamines
 - Legitimate medical use, highly addictive
 - Withdrawl: apathy, sleep disturbances, irritability, disorientation, depression with thoughts of suicide

Chapter 23: Medical Aspects of Chemical, Biological and Radiological Warfare

- Chemical Agents
 - Non-lethal Agents
 - Agents not designed to kill you
 - Lethal Agents
 - Agents that result in at least 10% death
 - Persistent Agents
 - Continues to present a hazard for considerable periods after delivery
 - Non-persistent Agents
 - Disperses rapidly after release and presents a short hazard (hours)
 - Detection Devices
 - M9 Chemical Agent Detection Paper
 - Most widely used to detect liquid agents (nerve or blister agents)
 - Is non-specific as to which agent is detected
 - Changes pink, red, reddish brown and purple if activated
 - Is able to stick to walls
 - M8 Chemical Agent Detector Paper
 - Is agent-specific detection
 - Turns yellow-gold for G Nerve Agent
 - Turns olive-green for VX Nerve Agent
 - Turns red with Blister Agents
 - M256A1 kit
 - Detects mustard, nerve and cyanide
 - Contains M8 paper and air vapor sampler (takes 15 minutes)
 - MOPP Levels
 - MOPPO
 - Carried: Mask
 - Available: garment, boots, gloves, decontamination kit
 - MOPP1

- Carried: Mask, gloves, boots, decontamination kit
 - Worn: Garment
- MOPP2
 - Carried: Mask, gloves, decontamination kit
 - Worn: Garment, boots
- MOPP3
 - Carried: Gloves, decontamination kit
 - Worn: Mask, garment, boots
- MOPP4
 - Carried: decontamination kit
 - Worn: Mask, garment, boots, gloves
- **Initial treatment for all agents is to remove patient from environment, do not do so without proper protective equipment for the rescuer**
- **Casualty Priorities:** (mask is on patient) control massive hemorrhage, first aid for shock and wounds, decontaminate, remove clothing, treat for less severe shock and wounds
- **Nerve Agents**
 - Greatest military concern
 - **VX, GA, GB, GD, GF**
 - Interferes with normal transmission of nerve impulses in the parasympathetic ANS
 - Odorless, nearly colorless, soluble in water
 - Vapor
 - Small amounts: constricted pupils, runny nose, dyspnea
 - Large amounts: miosis, loss of consciousness, convulsions, apnea, flaccid paralysis, copious nasal secretions
 - Liquid
 - Small amounts: localized sweating, nausea, vomiting, weakness
 - Large amounts: sudden loss of consciousness, convulsions, apnea, flaccid paralysis, copious nasal secretions
 - Treatment

- Atropine or Pralidoxime Chloride
- Mark 1 Kit contains both (being replaced by ATNAA kit)
- After injection of Mark 1 into thigh or buttock, wait 10 seconds
- If symptoms persist continue to inject at 10-15 minute intervals
 - Non medical personnel can inject 3 doses, medical can inject 6 doses
- Administer Diazepam for convulsions
- Decontaminate
 - Copious flushing with water
 - Wash with 1:10 bleach and soap
 - NO hot water or vigorous scrubbing
- **Blister Agents**
 - **H, HD, HN, L**
 - Vesicants, produce large incapacitating blisters
 - Mustards (H, HD, HN) easy to produce, no symptoms until hours after exposure
 - Oily, pale yellow, smells of **garlic, horseradish, mustard**
 - HN – Nitrogen Mustard
 - HD – Distilled Mustard
 - Lewisite (L)
 - Arsenical, intense pain upon contact
 - light to dark brown liquid, **smells like geraniums**
 - Affects eyes first
 - Pain and gritting feeling in the eyes, spastic blinking, photophobia, swelling, cornea damage, mild to moderate pain
 - Blisters form within 12-48 hours after contact
 - Most affected are warm and sweaty areas
 - Inhaled
 - Sore throat, pain, coughing, shortness of breath, crackles, rales, bronchiopneumonia
 - Treatment

- British Anti-Lewisite Agent (BAL)
 - Clean, decontaminate, it reduces toxicity by 50%
 - 1:10 bleach or 0.5% hypochlorite
- **Blood Agents**
 - **AC, CK**
 - Disrupts oxygen utilization at cellular levels, non persistent agents
 - AC – Hydrogen Cyanide smells like **bitter almonds**
 - Moderate exposure: increase in rate and depth of breathing, dizziness, nausea, vomiting, headache, eye irritation
 - Large exposure: Rapid Onset-increase in rate and depth of breathing, convulsions within 30 seconds, apnea, cardiac arrest in a few minutes
 - Treatment
 - 2 amyl nitrate ampoules crushed and inhaled every couple of minutes until 8 are used or IV sodium nitrate 300-600mg
 - Minimal decontamination required due to high evaporation
- **Pulmonary Agents**
 - **CG, CL, DP**
 - Damages the membranes in the lungs that separate alveolar tissue
 - Results in blood plasma to leak into the alveoli and fill them with fluid (pulmonary edema)
 - CG – Phosgene – colorless smells like **new mown hay** or **fresh cut grass**
 - CL – Chlorine
 - Heavy, travels close to the ground
 - 2-6 hours after exposure: irritation of respiratory tract, cough, dyspnea, tightness in chest
 - Latent symptoms: rapid shallow labored breathing, cyanosis, frothy sputum, clammy skin, rapid feeble pulse, low BP, crackles and rales in lungs starting in the lower lobes
 - Treat with complete rest with no exertion
- Riot Control or Harassment Agents
 - CN, CR, CS, DM, OC

- Crystallized solids
- Lacrimators – local, acts mostly on the eyes, excessive tearing, intense eye pain
- Vomiting agents – general malaise, prolonged nausea and vomiting
- Main effects for riot control agents:
 - Pain, burning, irritation, salivation, nasal secretions, coughing, possible skin reddening, shortness of breath
- Effects seldom last longer than 2 hours
- Treatment:
 - Don mask, symptoms may temporarily worsen, keep mask on, only take off to clear vomit or secretions
 - Flush eyes, oxygen, bronchodilators if needed, calamine lotion or other soothing substances for the skin
- Decontamination
 - Substance adheres to clothing so remove, rinse skin with continuous flow of water
- Biological Warfare
 - Bacteria
 - Single celled organisms capable of causing a variety of diseases by invading host tissues and producing toxins
 - Responds to antibiotics
 - Viruses
 - Smaller than bacteria
 - Intracellular parasites that lack their own metabolism
 - Causes changes in the host cell that leads to cell death
 - Toxins
 - Harmful substances produced by a variety of living organisms
 - NOT man-made, not volatile (vapor), not normally dermatologically active
 - Unlikely secondary or person to person hazard
 - Indications for possible biologic agent release
 - Unusual disease for geographic area

- Absence of a competent natural vector
- Restricted geographical grouping, distribution or clustering
- High morbidity or mortality compared to natural disease occurrence
- Dead animals of multiple species
- Anthrax
 - Bacillus Anthracis
 - Gram positive, encapsulating, spore forming, non-motile rod
 - Spores can survive for years while waiting for a host
 - Transmission is from contact of infected material, not person to person
 - 3 kinds of human anthrax
 - Cutaneous Anthrax
 - Spores enter skin, symptoms occur within 2 weeks of exposure
 - Skin infection, raised itchy bumps that forms vesicles with a black center
 - Fever, malaise, headache, nausea, vomiting
 - 20% death without treatment, death rare with treatment
 - Pulmonary Anthrax
 - Breathing in the spores, symptoms occur within 10 days in 2 stages
 - Early symptoms resemble general virus: fever, malaise, headache, sore throat, dyspnea, cough, congestion
 - Then pleural effusions for 2-5 days, progressing to chest pain, respiratory distress, dyspnea, diaphoresis, stridor, cyanosis, shock
 - Detectable with chest x-ray
 - 70% of cases have mediastinal widening
 - Usually fatal
 - Gastrointestinal Anthrax
 - Through eating contaminated food, usually meat, symptoms occur within 2-5 days

- Fever, abdominal pain, rebound abdominal tenderness, constipation, diarrhea
- Primary lesion is ulcerative, emesis blood tinged; looks like wet coffee grounds
- Death 25-60%
- Treatment
 - First: Ciprofloxacin 500mg PO BID or 400mg BID IV, or Doxycycline 100mg BID
 - Second: Amoxicillin 500mg TID PO or Penicillin G(2mu Q4hours IV)
 - Third: Rifampin, Clindamycin, Clarithromycin, Erythromycin
- Vaccine: series of 6 0.5ml shots SU: 0, 2, 4 weeks and 6, 12, 18 months with annual booster
- Plague
 - Yersinia Pestis
 - Found in rodents and fleas, onset is in 1-7 days
 - Gram negative rod, non motile
 - Easily destroyed by sunlight or drying, can only survive 1 hour after exposure
 - Pneumonic Plague
 - Occurs in lungs, can spread from person to person
 - Droplet precautions for providers
 - Sudden, high fever, chills, malaise, tachycardia, intense headache
 - Pneumonia, cough with hemoptysis, dyspnea, stridor, cyanosis, death
 - Bubonic Plague
 - Most common, comes from infected fleas
 - Swollen painful lymph nodes called buboes, high fever, chills, headache, malaise
 - Buboe – 1-10cm, swollen, painful, warm to the touch
 - Causes so much pain body part cannot be moved

- Progresses to Septicemic or Pneumonic Plague
 - Septicemic Plague
 - Multiplies in the blood, usually follows Bubonic Plague
 - Prostration, circulatory collapse, septic shock, organ failure, hemorrhage, disseminating intravascular coagulation, necrosis of extremities
 - Testing: laboratory gram positive, needs sample of CSF, buboe fluid or sputum sample
 - Treatment: if not done in first 18-24 hours death 100%
 - Primary: Streptomycin 1g IV BID, Gentamycin 5mg per 1kg IV or IM daily
 - Alternative: Doxycycline, Ciprofloxacin, Chloramphenical
 - Prophylaxis: for post exposure, give for 7 days
 - Primary: Doxycycline 100mg PO BID
 - Alternative: Ciproflaxacin, Chloramphenical
 - Decontaminate surfaces with 1% bleach
- Tularemia
- Francisella Tutarensis
 - Also known as Rabbit Fever
 - Usual occurs in animals, rural disease, from flea and tick bites
 - One of the most infectious pathogenic bacteria
 - Rarely fatal though incapacitating
 - General symptoms: abrupt onset fever, headache, chills, body ache, nausea
 - Subspecies
 - Jellison type A and B most virulent
 - Ulceroglandular
 - Most common, has skin ulcer and swollen lymph nodes
 - Pneumonic and typhoidal
 - Most likely to be used in an attack
 - Cough, chest pain, dyspnea
 - Treatment

- Primary: Streptomycin 1g BID IM or Gentamycin 5mg per kg daily
 - Alternative: Doxycycline, Ciprofloxacin, Chloramphenicol
- Prophylaxis:
 - At least 24 hours post exposure for 14 days
 - Doxycycline 100mg PO BID or Ciprofloxacin 500mg PO BID
- Botulinum Toxin
 - Clostridium Botulinum
 - Encapsulated, anaerobic, gram positive, spore forming, rod shaped
 - Neuroparalytic (muscle paralyzing) blocks acetacholine release from peripheral nerves
 - Highly lethal, easy to produce
 - Most toxic substance known
 - There are seven antigens (A-G) only A, B, E, F cause illness in humans
 - No person to person transmission
 - Food borne
 - Person ingests it, illness occurs within hours or days
 - Infant
 - Born with it, compromises a small number
 - Wound
 - Wound is directly infected
 - Inhalation
 - No natural occurrence, only used by terrorists
 - Incupation
 - 12-36 hours or several days if it is a low dose
 - Cranial nerve palsies (double and blurred vision, drooping eyelids, slurred speech), dysphagia, dry mouth and throat, muscle weakness
 - Progresses to paralysis of arms, legs, trunk then respiratory muscles
 - Treatment
 - Trivalent Antitoxin or Hipavalent Antitoxin

- Prophylaxis
 - Pentavalent Toxioid
- Inactivated by sunlight (1-3 hours) or heat (80 degrees C for 30 minutes) or 1% bleach
- Ricin
 - Forms from beans of castor plant (*Ricinus Communis*)
 - Blocks protein synthesis
 - Incubation 18-24 hours
 - Ingested
 - Nausea, vomiting, diarrhea, abdominal pain, renal and liver failure, death
 - Inhaled
 - Within 8 hours: cough, shortness of breath, respiratory distress and edema, airway necrosis, death
 - Injected
 - After 6 hours: weakness, myalgia
 - After 24-36 hours: vomiting, hypotension, multi-organ failure, death
 - NO treatment or prophylaxis
 - Decontaminate surfaces with 1% bleach solution
- Smallpox
 - Variola Major, Variola Minor
 - Humans are the only host, spreads through contact
 - Variola Major
 - More severe, high fever, extensive rash,
 - Rash can be ordinary, modified, flat or hemorrhagic
 - Death rate 30%
 - Variola Minor
 - Less common, less severe, death rate 1%
 - Within 10-12 days: High fever, headache, malaise, backache, rash

- 2-3 days later: rash with macules that turn into papules that turn into pustular vesicles that crust, scab, then fall off after 3 weeks
 - Treat symptoms
 - Prophylaxis
 - Immediate vaccination
 - Patients are contagious from beginning to end of rash
 - Airborne and droplet precautions
 - Burn or sterilize all equipment and clothing
 - Decontaminate surfaces with 5-10% bleach
 - Viral Hemorrhagic Fevers
 - Arenavirus – associated with rodent transmission, most common
 - Filovirus – 2 types, ebola and barborg
 - Bunyavirus – vector borne via arthropod
 - Flavivirus – group of viruses, arthropod vector borne
 - Fever, fatigue, dizziness, muscle aches, loss of strength, exhaustion
 - Severe cases: bleeding under the skin, internal organs, out of orifices
 - Shock, nervous system malfunction, coma, delirium, seizures
 - Treatment: supportive therapy
 - Prophylaxis: only exists for Yellow Fever
 - Strict isolation, decontaminate surfaces 1% bleach
 - Radiological Warfare
 - Radiation
 - Spontaneous and instantaneous decomposition of the nucleus of an unstable atom with the accompanying emission of a particle, gamma ray or both
 - Modes of radiation action in a cell
 - Direct
 - Radiation directly hits a sensitive atom or molecule in a cell
 - Irreparable damage resulting in cell death
 - Indirect

- When radiation interacts with water molecules in the body
 - Leads to unstable toxic hyperoxide molecules which damage sensitive molecules and affect sub-cellular structures
- Alpha Waves
 - Emitted from nucleus of some radioactive elements
 - Heavy, short range, unable to penetrate clothing or skin
 - Harmful if inhaled, swallowed or absorbed through wounds
- Beta Waves
 - Light, short range, ejected electrons
 - Travels several feet in the air, moderately penetrating
- Gamma and X-Rays
 - Electromagnetic waves
 - Highly penetrating, travel many feet, penetrates human tissue
- Neutrons
 - Emitted during nuclear fusion, big mass, 20 times worse than gamma rays
- International System of Units replacing American Terminology for measuring radiation
 - Measured in Gy instead of Joules, rods and rems
- Exposure factors
 - Time, distance, shielding
- Acute Radiation Syndrome (ARS)
 - Caused by irritation of the body by a high dose of penetrating radiation in a very short period of time
 - Prodromal Phase: Nausea, vomiting, diarrhea, malaise
 - Latent Phase: patient looks and feels healthy, then in 1-15 days gets sick again
 - Loss of appetite, fatigue, fever, nausea, vomiting, diarrhea, seizures, coma
 - Manifested Illness Phase
 - Day 1 lethal, after 2 weeks it's mild

- Convulsions, ataxia, tumor, lethargy, severe diarrhea, fever, electrolyte disturbance (lethal), leucopenia (moderate-severe), hemorrhage, pneumonia, hair loss
 - Skin damage – swelling, itchiness, redness, hair loss
- Chronic Radiation Syndrome (CRS)
 - Caused by long term exposure to low dose radiation
 - Sleep and appetite disturbance, generalized weakness, easy fatigue, increased excitability, loss of concentration, impaired memory, mood changes, vertigo, ataxia, headaches, chills, epistaxis, syncope, bone pain, hot flashes, bone or muscle tenderness, mild hypotension, tachycardia, tremors
- Radiation Dermatitis
 - Acute/Chronic – after heavy contamination of bare skin with beta waves
 - Skin: red, irritated, hair loss, edema, decreased sweating, wet or dry shedding of outer skin layers, ulcers, bleeding, necrosis, cancer
 - Prevention
 - Wash off contaminated material

Chapter 24: Emergency Treatment for Oral Diseases and Injuries

- Diseases of the Tooth
 - Dental Caries
 - Tooth decay
 - Also known as cavities
 - Pain with heat, cold, sweetness or referred pain
 - Chalky white spot, rough surface, dark stained cavity, area filled with a spongy mass
 - Remove debris, flush with warm distilled water, isolate tooth with cotton, dry cavity
 - Temporary filling: zinc oxide
 - Acute Pulpitis
 - Inflammation of the pulp
 - Most frequent cause of severe tooth pain
 - Spontaneous, continuous, intermittent pain that lingers, piercing pulsating pain, increased pain when lying down
 - Large carious lesion with or without pulpal exposure, blood or pus oozing with pulpal exposure, fractured tooth, missing restoration
 - Remove loose debris, dry cavity, pack with cotton moistened with eugenol, fill with temporary filling
 - Periapical Abscess
 - Infection of pulpal tissue causing necrosis
 - Constant throbbing pain, increased pain when chewing or lying down, bad taste in mouth, gumboil (painful swelling on gum), tooth feels longer, malaise, tender lymph nodes
 - Severe pain reaction with light pressure, gumboil, facial swelling, increased tooth motility, high temperature, large lymph nodes
 - Radiograph can help with identification
 - Drain abscess with explorer, evacuate cavity
 - If there is drainage fluid patient should feel immediate relief

- If there is no drainage have patient rinse with warm salt water every 10 minutes for 2 hours
 - NEVER apply heat
 - If there is still no drainage use ice pack
- Diseases of the Periodontal Tissue
 - Marginal Gingivitis
 - Inflammation of the gingival tissue
 - Sore swollen gums, bright red or purple gums, severe odor, gums tender and/or painful to the touch, bleed easily
 - Pain or bleeding with pressure, red swelling with loss of stipling, heavy plaque and calculus deposits, severe odor
 - Give Oral Health Instructions (OHI)(i.e. how to brush/floss your teeth), rinse with warm saline solution, remove soft debris
 - Necrotizing Ulcerative Gingivitis (NUG)
 - Severe infection of the tissue
 - Also known as Trenchmouth
 - More common with deployed personnel
 - Symptoms same as with gingivitis accompanied by: bad taste in mouth, pain with eating and brushing, excessive bleeding
 - Signs same but more severe as gingivitis accompanied by: heavy plaque and calculus deposits, ulceration and cratering of interdental papillae resulting in ‘punched out’ appearance, gray-white membrane covering gingival, foul odor, oozing pus, high temperature
 - Only a dentist can fully treat
 - Corpsman can give medication if temperature is above 101 degrees F and give OHI
 - Periodontitis
 - Progressive loss of alveolar bone around teeth
 - Can result in the loosening or loss of teeth

- Deep gnawing pain, itching gums, bleeding gums, food sticking between teeth, gingival recession, tooth aching with no caries, uneven bite, increased spacing of teeth, halitosis, metallic taste in mouth, loose teeth
 - Heavy plaque and calculus deposits, gingival inflammation bleeding and discoloration, ulcerated and cratered papillae, tooth mobility
 - Treat same as with marginal gingivitis
 - Periodontal Abscess
 - Infection of the periodontal tissue
 - Signs and symptoms same as periapical abscess
 - Probe to establish drainage
 - If that doesn't work apply warm saline
 - Pericoronitis
 - Inflammation of gingival around a partially erupted tooth
 - Pain when chewing, bad taste in mouth, difficulty opening mouth, swelling in neck area, fever
 - Partially erupted tooth, red inflamed tissue, oozing pus, painful reaction to touch, swelling, enlarged lymph nodes, high temperature
 - Irrigate under gingival flap, rinse with warm saline every 2 hours
- Other Oral Diseases
 - Stomatitis
 - Inflammation of the oral mucosa, including labial herpes
 - Painful swelling, fever blisters/cold sore/canker sore, pain when eating or drinking, fever, headache
 - Red swollen areas with blisters or small craters, blisters or craters covered with grayish white to yellow membrane
 - Treatment: no smoking, eating acidic foods, hot foods, alcohol
 - Post-Extraction Hemorrhage
 - Bleeding that starts or fails to stop after an extraction
 - Large amounts of blood in the mouth, weakness, blood on pillow after sleeping, blood clot in mouth, blood oozing or flowing from the site
 - Place moistened sterile gauze over site and instruct patient to bite down

- Post Extraction Alveolar Osteitis
 - Also known as 'Dry Socket'
 - Increased pain and discomfort 3-4 days after extraction, radiating pain, foul taste and odor
 - Absence of blood clot, food visible in socket
 - Rinse socket with warm saline solution, moisten strip of iodoform gauze with eugenol, place loosely in socket with forceps, dressing change the next day
- Fractured Teeth
 - Type I Fracture
 - Enamel is broken: slight chip on tooth, no exposure of dentin or pulp
 - Rough, sharp edge to tooth, pain with eating or drinking, sensitivity to heat, cold and air
 - Smooth sharp edges, dry, apply coat of varnish with cotton pellets and forceps
 - Avoid hot, cold foods and liquids or sticky foods
 - Type II Fracture
 - Effects enamel and dentin with no pulp exposure
 - Very rough, sharp edges, severe pain with heat, cold and air, toothache
 - Treatment option 1: Isolate area with cotton, dry, coat with zinc oxide and eugenol paste with light cured glass ionomer cement
 - No eating: hot, cold, spicy, sticky foods or drinking hot or cold liquids
 - Treatment option 2: (temporary crown): choose crown form, put 2-3 small holes in crown with explorer, fill crown with mix of calcium hydroxide or zinc oxide and eugenol, place crown
 - Keep a bland diet
 - Type III Fracture
 - Involves Enamel and Dentin with Pulp exposure
 - Extensive fracture with pulp exposure and possible bleeding
 - Most or all of the crown of the tooth is off

- Severe throbbing pain, very rough and sharp edges, severe pain with hot or cold air, inability to chew
- Treatment
 - Splint
 - Mix zinc oxide and eugenol, add cotton until it gets a dough-like consistency
 - Place so it covers affected tooth and neighboring teeth and well up lingual and facial aspects
 - Compress it, trim it
 - It will harden in several hours
 - Temporary Crown
 - choose crown form, put 2-3 small holes in crown with explorer, fill crown with mix of calcium hydroxide or zinc oxide and eugenol, place crown
- Type IV Fracture
 - Root fracture
 - Severe pain with heat, cold and air; inability to eat without severe pain, tooth mobility
 - Fractured root (can be seen in an x-ray), tooth mobility, facial trauma
 - Treatment:
 - Temporary splint (Corpsman will rarely treat)

Chapter 25: Decedent Affairs

- Manager of Navy and Marine Corps Decedent Affairs Program
 - Navy Casualty and Mortuary Affairs
- All small units and ships decedent affairs managed by:
 - CO, OIC, Medical Service Corps Officer and Senior Corpsman
- OPNAVINST 5360.1
 - Decedent Affairs Manual
- DD Form 2064
 - Certificate of Death
- DD Form 565
 - Statement of Recognition
- DD Form 1375
 - Request for Payment of Funeral and/or Internment Expenses
- DD Form 2062
 - Record of Preparation and Disposition of OCONUS Remains
- DD Form 2063
 - Record of Preparation and Disposition of CONUS Remains
- NAVSUP Form 29
 - Inventory of Personal Effects
- PADD
 - Person Authorized Direct Dependent
- SNOK
 - Secondary Next of Kin
- CACO
 - Casualty Assistance Calls Officer
- Decedent Affairs Programs
 - Current Death Program
 - Provides: professional mortuary services, supplies and related services to the care and disposition of remains
 - Remains are shipped to a place designated by the PADD

- Operational on a worldwide basis
- Graves Registration Program (GR, GRREG)
 - Provides: search, recovery, evaluation, temporary cemetery or mortuary, identification, disposition of personal effects found
 - Only operational when authorized by a responsible commander during military operations
- Concurrent Return Program
 - Combines Current Death Program and Graves Registration Program
 - Provides: Search, recovery, evacuation of remains, identification, preparation of remains in a mortuary, shipment for permanent destination designated by PADD
 - Operational when large military numbers are in a strategic area
- Return of Remains Program
 - Provides permanent disposition of remains
 - Activated only upon enactment of special legislation
- Casualty Assistance Calls Program
 - Administered by Chief of Naval Operations Personnel Command and Commandant of the Marine Corps
 - Casualty Assistance Calls Program is not a real part of Decedent Affairs
 - CACO to personally contact PADD
 - Provides: Disposition of remains, death gratuity, shipment of personal effects, claim documents to aid in the movement or settlement of the estate, SGLI, travel to the grave site
- Casualty Report
 - Must be submitted by the CO by priority message within 4 hours
- Notification of the PADD
 - Must be made between 0500 and 2400
- CACO
 - Assigned to family for 90 days – 9 months
- Confirmation of Casualty
 - Made by the CACO within 24 hours

- Condolence Letter
 - Written by the CO to the NOK within 48 hours
- Autopsy
 - Performed when death is considered: accidental, intentional, suicide, homicide, absent care of a physician
 - Automobile accident victim: at discretion of medical examiner
 - Requested by the CO
 - Aircrew Autopsy
 - All aircrew serving on a military aircraft will be recommended for an autopsy
 - Nonmilitary/Retired Personnel Autopsy
 - When deemed necessary must have written permission from NOK
 - Private autopsy
 - Full cost is on the PADD
- Search and Recovery
 - Don't notify NOK, family or media until instructed to do so by BUMED and the Navy Casualty Office
 - When search, recovery and identification operations go for more than 36 hours, progress reports will be submitted every 24 hours to BUMED and Navy Casualty Office
- Identification
 - Made when CO is satisfied beyond doubt and documentation that the body is properly identified
 - Substantiated identification requirements:
 - Minimum of 2 statements or recognition, dental and fingerprint comparison
 - Identification avenues
 - Fingerprints, forensic odontology, DNA
 - Final Navy Mortuary Affairs has 5 conclusions concerning the identification of remains
 - Identified Remains

- Unidentified remains but believed to be an individual
 - Unidentified unknown
 - Group remains, known individuals
 - Group remains, unknown individuals
 - Those pending identification
 - Duty Status Whereabouts Unknown (DUSTWUN)
- Contracts
 - Annual Contracts
 - Awarded to funeral providers for areas anticipating 3 or more deaths a year
 - One Time Contracts
 - Created by OPNAV
 - Contracts that cover:
 - Primary Funeral Expenses
 - Incurred with recovery, preparation, encasement and burial of remains
 - Secondary Expenses
 - Incurred in connection with the funeral and burial of remains
 - Transportation Expenses
 - Incurred when remains are moved
 - Private arrangements reimbursed:
 - Funds for removing, preparing, embalming, dressing, casketing, preparing body
- Remains re Fridgerated at above freezing point 36-40 degrees F or 2.2-4.4 degrees C
- Burial Clothing
 - Service dress blue uniform
- Transfer case
 - Remains put in a white cotton sheet
 - Polyethylene cover
 - Sealed with pressure sensitive tape or heat sealed
- Caskets

- 18 gauge silver tone metal sealer with cut top
 - Standard size – 23x78 inches
 - Oversized – 25x81 inches
- Vault
 - NOK's expense
- Cremation
 - Only by written request and if the PADD and SNOK don't object
- Disposition of personal effects
 - Inventory board appointed by the CO
 - Consists of a Commissioned Officer and another member
- Certificate of Death not prepared for persons missing
- Cemeteries
 - Arlington Cemetery under Army jurisdiction
 - Other National Cemeteries
 - Under Chief of Memorial Affairs Director, Department of Memorial Affairs, Veterans Administration
 - 3 Classifications of Cemeteries
 - Open – spaces available
 - Closed – no spaces available
 - New – planned but not yet open

NAVMEDCOMINST 6230.2: Malaria Prevention and Control

- Main areas of concern:
 - Central and South America, Africa, Middle East, Asia
- Some insecticide resistance in anopheles mosquito
- Commanders, Cos, OICs must ensure malaria prevention:
 - Supplies, individual instruction, malaria control measures observed, Disease Alert Report on all suspected or confirmed cases sent out
- If you received malaria treatment you must wait 3 years until you can donate blood
- G6PD Deficient people might develop hemolysis upon taking primaquin
- Personal Protective Measures
 - Insect repellent for clothes and skin with 5% DEET
 - Insecticide D-phenothrin 2%
 - Insect bar/netting, DEET jacket, head net
- Protective Actions
 - Minimizing outdoor activity
 - Vigilance during dusk-dawn (prim mosquito time)
- Chemoprophylaxis
 - Primary: Chloroquine and Primaquine
 - Secondary: Pyrimethamine Sulfadoxine, doxycycline
- Wilson Edison Test
 - Screens for chloroquine in urine
- Plasmodium Falciparum Malaria particularly fatal
- Anti-malarial drugs – parental chloroquine hydrochloride, quinidine gluconate, quinine dihydrochloride

BUMEDINST 6230.15: Immunizations and Chemoprophylaxis

- DOD Policy follows the recommendation of the CDC and Advisory Committee on Immunization Procedures (ACIP)
- All drugs must be licensed by FDA or DHHS
- Expiration Date Extensions
 - Must be authorized by the Surgeon General, CG-11 USCG
- Multidose Vial
 - Use within 28 days after opening
 - Record the date and user initials
- Immunization intervals
 - DO NOT compress unless otherwise approved by the CDC
 - DO NOT restart intervals, once it is started it must be finished
 - Must wait a week between inactive vaccines
 - Must wait at least 4 weeks between live vaccines
- Vaccines must be stored, shipped and handled by pharmaceutical manufacturers instructions
- Vaccine Documentations
 - Document all vaccines on SF 600, DOD electronic ITS, PHS form 731
 - Ensure no allergies
 - Eggs, gelatin, preservatives, latex, shellfish
- Exceptions to Vaccines
 - May be temporary (max 365 days) or permanent
 - Medical Exemption
 - Due to vaccine related adverse effect
 - Must be reported to Vaccine Adverse Events Reporting System (VAERS)
 - Underlying health condition, evidence of immunity based or serologic tests or documented infection, complex clinical case
 - Administrative Exemption

- Separation or retirement – must be within 180 days of separation or 30 days or less of remaining service
 - Religious Exemption
 - Exemptions must have name, SSN, rank, occupational specialty code or brand, description of belief
 - Made with medical and chaplain advice
- Recording Vaccines
 - Electronic Immunization Tracking System
 - This is preferred, must comply with National Vaccine Injury Compensation (NVIC)
 - PHS 731, SF 601, DD 2766
 - Use abbreviations and Arabic Numerals (example: 13JUN12)
 - Include type, manufacturer, lot number, expiration date, site vaccine was given, vaccination information sheet given, initials
 - If documentation is lost assume that member is up to date
- Transcribing Records
 - Entries based on prior official records
 - Includes: “Transcribed From Official Records” (name source) with initials of transcriber
- Jet injection immunization devices are not approved as of 1997
- Emergency Response Requirements
 - Written plan, at least 1 present person that is BLS certified, OPA, knowledge about the use of epinephrine
- Post Vaccination
 - Observe patient for 15-20 minutes
 - Fly Status
 - All air crew are no-fly status for 12 hours
 - People with previous adverse reaction grounded for 72 hours
 - Japanese Encephalitis
 - 1st dose: grounded 3 days, 2nd dose: grounded 5 days, 3rd dose: grounded 3 days

- Adverse Events
 - Must be recorded
 - ID, lot number, manufacturer, date, name and location of MTF, type and severity of event, treatment, any exemption from additional doses
 - Record on VAERS
 - Report to Med Watch within 7 days
- People Subject to Immunizations
 - Military, civilian employees, contracted workers, other (family members, foreign nationals, detainees)
- Vaccine Specifics
 - Adenovirus
 - Given to new trainees with previous respiratory infections
 - Cholera
 - Not required for international travel
 - Haemophilus (HIB)
 - Given to people with no spleens
 - Japanese Encephalitis
 - Disease is mosquito borne
 - Give within 10 days of deployment
 - Give booster every 3 years
 - MMR
 - 2 lifetime doses
 - For people born after 1957
 - Meningococcal
 - Within 2 weeks of basic training
 - Varicella
 - 2 doses 4-8 weeks apart
 - Yellow Fever
 - Mosquito borne
 - Give within 10 days of deployment
- Chemoprophylaxis

- Anthrax
 - Antibiotics can increase survival after exposure before symptoms appear
 - Doxycycline or Ciprofloxacin
 - Child: amoxicillin suspension
- Group A Strept
 - Penicillin G benzathine IM, Penicillin VK orally
- Leptospirosis
 - Doxycycline prevents and treats
- Malaria
 - Mosquito prevention
 - Treatment is different per person, per area, per strain
 - Test people with Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency before issuing Primaquine Phosphate prophylactically
- Meningococcal Disease
 - Rifampin, ceftriaxone, ciprofloxacin, sulfadiazine
- Plague
 - Tetracycline, doxycycline, chloramphenicol
- Scrub Typhus
 - From bites of larval mites
 - Doxycycline
- Traveler's Diarrhea
 - Food/water discipline
 - Ciprofloxacin

BUMEDNOTE 6230: Immunizations Requirements and Recommendations

- Recording Immunizations
- Write date, manufacturer, lot number, dose given, site given, route of administration, vaccine information sheet given, name and addressed title of person administered, name of MTF
- Done on PHS 731, NAVMED 6230/4, NAVMED 6230/5
- Shipboard Non-Tactical Active Duty Program (SNAP)
- Automated medical system
- Preferred Navy electronic system for capturing immunizations
- Live Virus Vaccines
- Advise against pregnancy for at least 30 days
- At least 4 weeks between live virus vaccinations
- Smallpox, varicella, MMR
- Dosages
- VAQTA
- 50 units/1ml IM repeat in 6-12 months
- HAVRIX
- 1440 ELU/1ml IM repeat in 6-12 months
- HBV
- 3 1ml IM dosages at 0, 1, and 6 months
- If over the age of 11 give 2 doses 1ml 4-6 months apart
- IPV (Inactivated Polio Virus)
- 0.5ml SQ
- JEV (Japanese Encephalitis Vaccine)
- 3 1ml doses SQ on days 0, 7 and 30
- Observe for 30 days
- Air Force: grounded 24 hours per dose, 72 if negative reaction in the past
- Navy: 1st dose: grounded 3 days, 2nd dose: grounded 5 days, 3rd dose: grounded 3 days

- MMR (Measles, Mumps, Rubella)
- All medical workers must be given 0.5ml regardless of past vaccines
- Don't give with TB test
- Wait 4-6 weeks for TB test
- Must be reconstituted, use immediately or reconstituted within 8 hours
- Meningococcal Vaccine (quadrivalent)
- Areas: sub Sahara, Saudi Arabia
- 0.5ml SQ and 5 year booster
- Use vials within 24 hours of reconstitution or reconstituted for 10 days
- Pneumococcal Vaccine Polyvalent (PPV23)
- For everyone ages 65 and older or immunocompromised
- 0.5ml IM or SQ with booster in 5 years
- Pneumococcal Conjugate Vaccine (PCV7)
- 23 months old or younger
- 0.5ml IM
- Tetanus – diphtheria
- 0.5ml IM every 10 years
- Typhoid
- Live oral virus
- 1 capsule by mouth on days 1, 3, 5 and 7
- Yellow Fever
- 0.5ml SQ every 10 years
- Temperature
- Check temperatures twice a day
- NO MERCURY THERMOMETERS

BUMEDINST 6440.5 Health Services Augmentation Program (HSAP)

- BUMED Deputy Chief of staff and human resources are responsible for CUIC
- DSC – Deployment Support Center
- CUIC – Component Unit Identification Code
- EMPARTS – Expeditionary Medicine Platform Augmentation Readiness and Training System
- ITEMPO – Individual Personnel TEMPO
- Command Readiness Officer (CRO)
 - Verifies deployments and puts them in EMPARTS and ITEMPO
 - Establishes a DSC and ensures CUIC billets are done
 - Updates EMPARTS
 - Uses HSAP to ensure personnel are administratively deployable within 30 days of arrival and maintains deployability
 - Does military readiness requirements training
 - Ensures leadership is knowledgeable of responsibilities in deployment
 - Performs entry and exit interviews with PCS personnel
 - Keeps MILPERS updated
 - Assign all residual personnel to vacant platform billets
 - Responsible for budget and supply (clothes, equipment, etc.) required for deployment and readiness training
 - Coordinate active and reserve credentialing process
 - Ensures deployment history is in EMPARTS and ITEMPO
 - Provides Letter of Assignment (LOA) within 10 days of CUIC personnel arrival informing platform assigned status, responsibilities, uniform and training
 - Appoint an OSO
- Operations Support Officer (OSO)
 - Knowledgeable in policies and procedures of HSAP, DSC and local readiness
 - Can assume the positions of Readiness Officer or POMI Officer
 - Assists the CO with reservists concerning HSAP

- Platform Manning Priorities based on contingency support requirements
 - Priority 1: Marine Forces (MARFOR)
 - Under MARFOR: Marine Expeditionary Force (MEF), Marine Division (MARDIV), Marine Aircraft Wing (MAW), Marine Logistics Group (MLG)
 - Staffing Minimum: peace – 80%, war – 95%
 - All officers must have attended U.S. Marine Corps Field Medical School for Officers
 - All Corpsmen must be 8404
 - Females may be under: MARFOR, MEF, MLG, MAW
 - MARDIV as a last resort
 - Priority 2: Casualty Receiving and Treatment Ship (CRT)
 - 84 personnel each for level 2 HSS
 - Priority 3: Forward Deployed Preventative Medicine Unit (FDPMU)
 - OIC chosen by CO of Naval Environmental Health Center
 - Medical responsibility can exceed organic capability
 - Priority 4: Expeditionary Medical Facility (EMF)
 - Up to level 3 HSS, CO's are designated by BUMED
 - Assumes none of primary sourcing command
 - Priority 5: Construction Battalion Unit (CBU)
 - When support NMCP level 1 HSS
 - Corpsman must be 8404
 - Priority 6: Hospital Ship (T-AH) Level 3 HSS
 - Owned by Military Sealift Command (MSC)
 - Priority 7: Outside Continental United States (OCONUS) MTF
 - Use USNAVHOSP Yokosuka, Okinawa, Guam, level 4 HSS
 - Priority 8: Blood Processing Unit (BPU)
 - Supports Armed Service Whole Blood Processing Laboratory (ASWBPL) and Blood Donor Center (BDC)
 - Joint Force Maritime Component Command (JFMCC) Medical Augmentation Cell (MAC)

- Medical responsibility can exceed organic capability
- Administration of Deployable Personnel
 - Commands are responsible for maintaining readiness requirements
 - Personnel will report to command with:
 - ID tags, CAC, DD2766, copy of NAVPERS 1070/604 (enlisted qualifications history), copy of NAVPERS 1070/602 (dependency application/record of emergency data worksheet), copy of SGLI, PHS 731 (international certificate of vaccinations), copy of NAVPERS 1740/6 (family care certificate), security clearance
 - Commanders, Cos, OIC coordinates for evaluations, fitreps, advancement requirements, leadership training
- Funding
 - BUMED
 - Run by Deputy Chief of Staff for Resource Management and Control (BUMED-M8)
 - Navy Medicine Support Command
 - Manpower, Personnel, Training and Education Command (NAVMED MPT&E)
- NAVMED Regions
 - Responsible for command/fiscal coverage over subordinate commands in region
 - Commands
 - CONOS part of Embarcation (POE) – travel, TAD
 - CONUS part of deportation (POD) – travel, TAD upon detachment
 - CONUS Replacement Center (CRC) – augmented personnel from CRC to employment location
 - Combat Commander (COCOM) – travel, TAD during deployment
- Training
 - MPT&E and platform sponsors coordinate readiness training
 - Frequency of HSAP training depends on service codified training requirements
 - Conducted through TYCOM

- Navy Medicine Support Command (NMSC)
 - Ensures training is adequate, coordinates it, identifies proper training programs
 - Direct subordinate commands on training resources using BUMED-M8
- USMC Training
 - Marine Corps Training and Education Command (TECOM) responsible
- Personnel Management
 - Parent commands ensure deployment history is in EMPARTS and ITEMPO
 - Personnel cannot deploy for 6 months or 180 days following the end of last deployment or upon reporting
 - Return from deployment no more than 6 months prior to PCS or retirement
 - Return from deployment no more than 3 months prior to separation
- Casualty Replacement
 - (USMC) Replaced through normal service procedures by requesting through COC
 - Replacements report to Camp Lejeune or Camp Pendleton for predeployment training
- Deployment Support
 - Commanders will establish deployment support
 - BUMED authorizes direct liason authority (DIRLAUTH)
 - Command CRO: ensures personnel readiness of HSAP personnel
 - Coordinates personnel affairs (FCP, etc)
 - Coordinates transportation and billeting requirements
 - Submits deployment reports and briefs to personnel
 - Command Public Affairs Officer
 - Coordinates with the local media
- Medical Fleet Readiness Response Plan (MERP)
 - Readiness Categories
 - Routine Deployable
 - Can deploy within 5 days
 - Supports a T-AH with 250 beds or an EMF with 500 beds every 6 months

- Surge Ready
 - Can deploy within 30 days
 - Support a T-AH with 500 beds or an EMF with 500 beds every 6 months
 - Emergency Surge
 - Can deploy within 120 days
 - Support a T-AH with 1,000 beds or an EMF with 500 beds every 6 months
 - Reservists – First call Program Personnel can be ready in 72 hours
- Status of Resources and Training System (SORTS)
 - Used to issue readiness to a unit or command
 - C1 - Fully mission capable
 - Can complete full wartime mission
 - C2 – Sustainably combat ready, has minor deficiencies
 - Can complete bulk of wartime mission
 - C3 – Major deficiencies, can still perform
 - Can do major portion of wartime mission
 - C4 – unable to perform unless given resources or training
 - Can perform part of wartime mission
 - C5 – Can't perform
 - Usually given under a ship during major overhaul
- Expeditionary Medicine Platform Augmentation Readiness and Training System (EMPARTS)
 - Monitors data for deployment trends and impacts on healthcare operations
 - Monitors data accuracy
 - Individual Augmentee – BIOMED provides command and control
- BASIC HSAP DEFINITIONS
- CRO - Command Readiness Office
 - Identified by the command, responsible for monitoring and advising in command's readiness
- BSO – Budget Submitting Officer

- CUIC – Component Unit Identification Code
 - Subordinate to UIC, aligns manpower to operational platforms
- DSC – Deployment Support Center
 - Temporary processing center established at sourcing commands to facilitate deployment of augmented personnel
- DMHRSi – Defense Medical Human Resource System internet
 - DOD web-based program to manage manpower and personnel readiness
- EMPARTS – Expeditionary Medicine Platform Augmentation Readiness and Tracking System
 - Web-based automated information system used to track the readiness status of BSO-18
- FAC A – Functional Area Code A
 - Active component BSO 18 officer and enlisted requirements
- FAC R – Functional Area Code R
 - Medical department officer and enlisted requirements of the navy reserves
- ITEMPO – Individual Personnel TEMPO
 - Tracks and reports deployment days for individuals who are away from their homeport or assigned unit
- OSO – Operational Support Officer
 - Formerly known as the Reserve Liason Officer
 - Coordinates reserve utilization
- Platforms
 - BSO 18 resources aligned to Operating Force requirements; capability
- PRO – Platform Responsible Officer
 - Senior officer assigned to CUIC platform, designated by the command to assist the CRO
- P-Status
 - Measures the percentage of operational billets filled in EMPARTS
- R- Status

- Measures the overall readiness status of a member or platform based on their training (T-Status) and platform billet assignments or fill rate (P-Status) in EMPARTS
- Residuals
 - BSO-18 personnel not assigned to an Operating Force Platform and eligible for assignment to Operating Force missions
- BUMED-M1
 - BUMED Deputy Chief of Staff, Human Resources
- BUMED-M3
 - BUMED Deputy Chief of Staff, Operations
- BUMED-M4
 - BUMED Deputy Chief of Installations and Logistics
- BUMED-M8
 - BUMED Deputy Chief of Staff, Resource Management/Comptroller

MCWP 4-11.1 Health Service Support Operations

Chapter 3: Operations

- Health Service Support (HSS) mission area common and important to every Marine Air Ground Task Force (MAGTF)
- Mission, Enemy, Terrain and weather, Troops and support – Time available (METT-T)
 - Determines the size, type and configuration of HSS capabilities to support the MAGTF
- Marine Corps Forces (MARFOR)
 - Deals with the operational level of war
 - MARFOR commander responsible for HSS
 - MARFOR surgeon, dental officer, medical planner, medical administrative officer advises MARFOR commander
- Marine Expeditionary Force (MEF)
 - Deals with the tactical level of war
 - MEF commander responsible for HSS
 - MEF surgeon, medical planner, medical administrative officer, preventative medicine officer, corpsmen and dental techs responsible for establishing HSS requirements and ensuring mission safety
 - Anything beyond MEF's HSS capabilities is handled by the Force Service Support Group (FSSG)
- Marine Division (MARDIV)
 - Staff: Surgeon, medical planner and administrator, psychiatrist, corpsman
 - Focuses on Ground Combat Element (GCE)
 - Plans on a company or platoon level with corpsman assistance
- Marine Air Wing (MAW)
 - Staff: wing surgeon, medical planner and administrative officer, environmental health officer, industrial hygienist, optometrist, corpsman
 - Focuses on Air Combat Element (ACE)
 - Each MAW has 4 Marine Activity Groups (MAGs)
 - Each has a flight surgeon and a couple of hospital corpsmen

- Each MAG has the support of the Marine Wing Support Squadron (MWSS) of the Marine Wing Support Group (MWSG)
 - Each MWSS has 1 flight surgeon and 1 hospital corpsman
- Force Service Support Group (FSSG)
 - Group surgeon advises on the status of HSS and looks over group aid station
 - Health Service Support Officer (HSSO)
 - Coordinates GCE and ACE support for those who need assistance when requirements exceed capabilities
 - Officer is in charge of Combat Service Support Operations Center during excersises or operations
 - Has a medical battalion
 - Each have 3 Surgical Companies (SurgCo) and 8 Shock Trauma Platoons (STP)
 - Handles immediate care
 - Has Medical Logistics Company (MedLogCo)
 - Manages/supplies equipment
 - Provides Approved Medical Allowance List (AMAL) and Approved Dental Allowance List (ADAL)
- Medical Battalion
 - Is within the FSSG
 - ‘Above’ Medical Aid Station
 - Has lifesaving capabilities
 - Provides initial resusitative surgical intervention, temporary casualty holding, ground evacuation support, preventative medicine support
 - 260 holding beds, 9 operating rooms
 - Made up of Headquarters and Services (H&S) and 3 SurgCos
 - H&S company has 8 STPs
 - Each STP has 10 patient beds
 - Each SurgCo has 60 beds with 3 operating rooms
- Surgical Company
 - Within the Medical Battalion, which is within the FSSG

- Provides immediate support to regimental sized operations
 - Includes: resuscitative surgery, medical treatment, temporary holding of casualties
- Composed of: Headquarters Platoon, Triage/Evacuation Platoon, Surgical Platoon (with 3 surgical sections each supporting an operating room), Combat Stress Platoon, Services Platoon (2 laboratories, 2 pharmacies, 2 radiologies)
- Shock Trauma Platoons (STP)
 - Within the (H&S) which is within the Medical Battalion, which is within the FSSG
 - Smallest, most mobile
 - Can serve almost anywhere
- Dental Battalion
 - Under the FSSG
 - FSSG can provide it for the MEF
 - In an operational environment it provides emergency care
 - Provides sterilization support
- Medical Logistics Company (MedLogCo)
 - Within the FSSG
 - Maintains medical equipment
 - Maintains centralized acquisition, storing and stock rotation
 - Constructs AMALs and ADAL
 - Resupplies AMAL, ADAL and line items in support of the mission
- Marine Expeditionary Unit
 - Deploys with their own HSS
 - If needs exceed their capability support is provided by HSS Detachment (HSSD)
 - HSSD structure: STPs, H&S company, Medical Battalion elements, MedLogCo detachments, Dental Battalion detachments
- Phasing Support Ashore
 - Commander of Amphibious Task Force (CATF)
 - Has overall responsibility of movement of amphibious operations

- Senior medical officer of each ATF ship responsible to ship's CO for HSS to all personnel
- Capabilities external to the MAGTF
 - Casualty Receiving and Treatment ships (CRT)
 - Largest medical capability
 - Required by Navy medical department personnel to achieve full casualty treatment capability
 - Casualties can be delivered via helicopter or service craft
 - Ships that can be converted to CRTs:
 - LHD, LHA, LPH
 - Fleet Hospitals
 - Medically and surgically intensive
 - Deployable and transportable
 - Substantially self-supporting and relocatable
 - Hospital Ships (T-AH)
 - Floating surgical hospital
 - Designed to receive patients by helicopter
- Augmentation:
 - Fleet Surgical Teams
 - Pacific and Atlantic fleets have 9 teams
 - Mobile Medical Augmentation Readiness Team (MMART)
 - Provides rapid peacetime response teams of pre-identified medical personnel
 - Medical Augmentation Program (MAP)
 - Means by which operating forces are brought to wartime manning levels
 - Managed by BUMED

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Chapter 4: Logistics

- Encompasses the procurement, initial issue, management, resupply and disposition of material for the MARFOR
- Information that ensures HSS responsiveness to commander:
 - Concept of Operation, Combat Intensity, Duration of Operation, Casualty Estimates
- Allowance and Source of Logistics
 - Allocation of materials documented in the Table of Equipment (T/E), AMAL, ADAL and Normal Replenishment Supply Support
 - Designed to support MEF in 'worse case scenario' for 60 days of combat
 - T/E
 - Items necessary for basic support of the organization
 - Tentage, vehicles, tools, communication equipment, NBC gear, specialized clothing, office equipment
 - AMAL and ADAL
 - Specialized equipment and supply assemblages for medical and dental elements to provide combat HSS
 - Provides: trauma management, resuscitative surgery, expeditionary laboratory, pharmacy, radiology, dental, preventative medicine, NBC treatment, patient holding, sick call, environmental supplements, HSS test and repair systems
 - Normal Replenishment and Supply Support
 - Used in operations for more than 60 days
 - Single Integrated Medical Logistics Manager (SIMLM)
 - HSS logistics normally a service responsibility
 - But in joint operations SIMLM may be designated to provide central support
 - Encompasses: provisions of medical supplies, equipment maintenance and repair, blood management, optical fabrication
 - Serves all operations except Navy Combat Ships

- Individual HSS Equipment
 - HN assigned to MAGTF assigned first aid kit as their field gear
 - Dental officers will be assigned dental instrument and supply set
- Patient Movement Items (PMI)
 - Medical equipment and supplies required to support the patient during evacuation
 - Plans for PMI exchange system and return of Aeronautical Evacuation (AE) equipment and PMI to the MTF will be addressed in the Respective Operation Plan (OPLAN)
 - When a patient requires evacuation originating MTF is responsible for providing PMI
- Disposal of Materials
 - If in US or it's territories Defense Reutilization Marketing Office (DRMO) coordinates disposal
 - Peacetime disposal overseas
 - DRMO or supporting CSSE
 - Wartime disposal
 - Burning followed by deep burial (6 feet)
- Protection of Medical Supplies
 - Medical material is protected under the law of land warfare and Geneva conventions
 - Mixture of medical and combat material voids these

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Chapter 7: Preventative Medicine

- Pre-Deployment
 - Collecting, disseminating environmental and epidemiological information
 - Recommending personnel augmentation requirements
 - Recommending immunization and other preventative measures
 - Training individuals in personal hygiene, personal protective measures protection equipment and field sanitation
 - Assisting medical units in completing pre-deployment requirements
- Deployment
 - Disseminating militarily significant preventative medicine information
 - Provides technical oversight on food service operation and procurement
 - Provide oversight and testing at water points and bulk water storage
 - Conduct disease vector and pest surveillance and control when feasible
 - Maintain health and pest control equipment
 - Conduct weekly disease and injury surveillance checks
- Navy Environmental Health Center
 - Located in Norfolk, VA
 - Conducts: risk screening, data evaluation, exposure assessments, toxicity assessments, health risk evaluations, health and safety planning, teaches environmental risk communication
 - Provides: Navy Environmental Health Units, Navy Disease Vector Ecology and Control Centers, Forward Deployed Laboratory

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Chapter 10: Combat Casualty Reporting

- In combat operations, unit corpsmen and MTF's are primary sources of individual casualty data
- DD Form 1380
 - Field Medical Card
 - Corpsmen carry it, attaches to the casualty, keeps a carbon copy
 - Establishes patient accountability
 - Used as an emergency tag for all casualties
- ID Tags (dog tags)
 - Has member's name, SSN, blood type, service component, religious preference, protective mask size
 - Member and unit responsible for making sure information is accurate
 - When buried in a combat area one goes with the deceased, the other on a grave marker