

Wallenpaupack Area School District Planned Course Curriculum Guide

WAHS - CTE

Protective Service II Emergency Medical Technician

Course Description:

An emergency medical technician (EMT) is a health professional whose primary focus is to respond to, assess and triage emergent, urgent and non-urgent requests for medical care, and to apply basic knowledge and skills necessary to provide patient care and medical transportation to/ from an emergency or health care facility. Depending on a patient's needs and/or system resources, EMTs are sometimes the highest level of care a patient will receive during ambulance transport. EMTs often are paired with higher levels of personnel as part of an ambulance crew or other responding group. With proper supervision, EMTs may serve as a patient care team member in a hospital or health care setting to the full extent of their education, certification, licensure and credentialing. In a community setting, an EMT might visit patients at home and make observations that are reported to a higher-level authority to help manage a patient's care. When practicing in less populated areas, EMTs may have low call volume coupled with being the only care personnel during prolonged transport. EMTs may provide minimal supervision of lower-level personnel. EMTs can be the first to arrive on scene; they are expected to quickly assess patient conditions, provide stabilizing measures and request additional resources as needed. This curriculum is intended to prepare a medically competent EMT-Basic to operate in the field.

Initial Creation Date (if applicable) and Revision Dates: February 26, 2025;

Wallenpaupack Area School District Curriculum	
COURSE: Protective Service II – Emergency Medical Technician	GRADE/S: 10-12
UNIT 1: Preparatory	TIMEFRAME:

**PA COMMON CORE/NATIONAL STANDARDS: National Highway Traffic and Safety Administration (NHTSA) Education Standards 2021.
NHTSA National Standard Curriculum 2021.
NHTSA Scope of Practice Model 2021.**

UNIT OBJECTIVES (SWBATS): Applies knowledge of the EMS System, Safety/Well-being of the EMT, Workforce Safety & Wellness, Research, Documentation, EMS System Communication, Therapeutic Communication, Medical/Legal and Ethical Issues, Anatomy & Physiology, Medical Terminology, Pathophysiology and Life Span Development to the provision of emergency care.

EMS Systems:

- EMS systems
- Roles, responsibilities and
- Professionalism of EMS
- Personnel.
- Quality improvement vs. Quality Assurance.
- Role of medical oversight
- Culture of safety / patient safety
- Continuum of care
- History of EMS
- Systems of care, e.g., Stroke,
- STEMI, Trauma, Pediatrics
- MIH/CP and other EMS-related
- Specialty roles.

Workforce Safety & Wellness

- Standard safety precautions
- Personal protective equipment
- Lifting and moving patients
- Crew resource management
- Stress management
- Prevention of work-related
- Injuries and illnesses
- Responder mental health,
- Resilience and suicide
- Prevention
- Wellness principles
- Disease transmission

Research

- Impact of research on EMT care
- Data collection
- Evidence-based decision
- Making

Documentation

- Recording patient findings
- Principles of medical
- Documentation and report writing
- Supporting medical necessities
- Recording patient findings
- Principles of medical
- Documentation and report writing

EMS System Communication

- EMS communication system
- Communication with other health care professionals to include cohesive and organized patient handoff
- Team communication and dynamics
- Telemetric monitoring devices and transmission of clinical data, including video data

Therapeutic Communication

- Health care literacy
- Interviewing techniques
- Verbal defusing strategies
- Managing communication challenges
- Family centered care
- Adjusting communication strategies for age, stage of development, patients with special needs
- Non-discriminatory communication that addresses inherent or unconscious bias, is culturally aware and sensitive, and intended to improve patient outcome.

Medical/Legal & Ethical Issues

- Consent/involuntary consent/refusal of care
- Confidentiality
- Advanced directives
- Tort and criminal actions
- Evidence preservation
- Statutory responsibilities
- Mandatory reporting
- Ethical principles/moral obligations
- End-of-life issues

- Patient rights/advocacy

Anatomy & Physiology

- Applies knowledge of the anatomy and function of all human systems to the practice of EMS.

Medical Terminology

- Uses anatomical and medical terms and abbreviations in written and oral communication with colleagues and other health care professionals.

Pathophysiology

- Applies knowledge of the pathophysiology of respiration and perfusion to patient assessment and management

Life Span Development

- Applies knowledge of life span development to patient assessment and management

INSTRUCTIONAL STRATEGIES/ACTIVITIES: Didactic instruction flowed by skills laboratory.

Didactic

- Lecture presentation
- Oral Discussion

Laboratory

- Skills Demonstration
- Equipment demonstration
 - Safety Review
- Scenarios

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

Assessment in Action exercises
 Interactive Lectures
 Written (online) test
 Written (online) quiz
 Laboratory Reflection
 Workbook Assignments
 Reading Logs
 Online Discussion Questions
 Simulated NREMT Test Question
 Cornell Notes
 Classroom Behavioral Affective Domain Evaluation
 Laboratory Behavioral Affective Domain Evaluation

DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

RESOURCES (Technology Based Resources, Text Resources, etc.):

Chapter Slides
 E-book
 Audio book

Supplemental online videos (explanation, demonstration & visualization of anatomy, diseases, traumatic injuries, task performance, equipment use)

Test Prep Simulator

KEY VOCABULARY:

Abandonment- Unilateral termination of care by the EMT without the pt's consent and without making provisions for transferring care to another medical professional with the skills and training necessary to meet the needs of the pt.

Abdomen- The body cavity that contains many of the major organs of digestion and excretion, it is located below the diaphragm and above the pelvis

Abduction- Motion of a limb away from the midline

AC joint- a simple joint where the bony projections of the scapula and the clavicle meet at the top of the shoulder

Access- Gaining entry to an enclosed area and reaching a pt.

Accessory muscles- The secondary muscles of respiration. They include the neck muscles (sternocleidomastoids), the chest pectoralis major muscles, and the abdominal muscles

Acetabulum- The depression on the lateral pelvis where its three component bones join, in which the femoral head fits snug

Acidosis- the buildup of excess acid in the blood or bloody tissues that can result from a primary illness

Acromioclavicular joint- a simple joint where the bony projections of the scapula and the clavicle meet at the top of the shoulder

Adenosine triphosphate-the nucleotide involved in energy metabolism; used to store energy

Adolescent-a young person aged 12-18 years

Adrenal glands- endocrine gland located on top of the kidneys that release adrenaline when stimulated by the sympathetic nervous system

Adrenergic- Pertaining to nerves that release the neurotransmitter norepinephrine, or noradrenaline (eg, adrenergic nerves, adrenergic response); also pertains to the receptors acted on by norepinephrine

Advance directive- written documentation that specifies medical treatment for a competent pt should the pt become unable to make decision; also called a living will or health care directive

Advanced EMT (AEMT)- an individual who has training in specific aspects of advanced life support, such as IV therapy, and the administration of certain emergency medications

Advanced life support (ALS)- Advanced life-saving procedures, some of which are not being provided by the EMT

Aerobic metabolism- Metabolism that can proceed only in the presence of oxygen

Aging- the process by which the temporary bond between an organophosphate and acetylcholinesterase undergoes hydrolysis, resulting in permanent covalent bond

Air ambulances- fixed-wing and rotary-wing (helicopters) aircraft that have been modified for medical care; used to evacuate and transport pt with life-threatening injuries to treatment facilities

Airway- the upper airway tract of the passage above the larynx, which includes the nose, mouth, and throat

Algor mortis- cooling of the body after death until it matches the ambient temp.

Alkalosis- the buildup of excess base (lack of acids) in the body fluids

ALS- advanced life-saving procedures, some of which are now being provided by the EMT

Alveolar minute volume- the volume of air moved through the lungs in 1 min. minus the dead space; calculated by multiplying tidal volume (minus dead space) and respiratory rate

Alveolar ventilation- the volume of air that reaches the alveoli. It is determined by subtracting the amount of dead space from the tidal volume

Alveoli- the air sacs of the lungs in which the exchange of oxygen and carbon dioxide takes place

Ambient temperature- the temperature of the surrounding environment

Ambulance- a specialized vehicle for treating and transporting sick and injured pts

American standard safety system- a safety system for large oxygen cylinders, designed to prevent the accidental attachment of a regulator to a cylinder containing the wrong type of gas

Americans with Disabilities Act (ADA)- comprehensive legislation that is designed to protect people with disabilities against discrimination

Anaerobic metabolism- metabolism that takes place in the absence of oxygen; the main by-product is lactic acid

Anatomic position- the position of reference in which the pt stands facing forward, arms at the side, with the palms of the hands forward

Anatomy- the study of the physical structure of the body and its components

Angioedema- localized areas of swelling beneath the skin, often around the eyes and lips, but can also involve other body areas as well

Anisocoria- naturally occurring uneven pupil size

Aorta- the main artery leaving the left side of the heart and carrying freshly oxygenated blood to the body

Aortic aneurysm- a weakness in the wall of the aorta that makes it susceptible to rupture

Aortic valve- the one-way valve that lies between the left ventricular and the aorta and keeps blood from flowing back into the left ventricle after the left ventricle ejects its blood into the aorta; one of the 'four heart valves

Apex- the pointed extremity of a conical structure (plural apices)

Appendicular skeleton- the portion of the skeletal system that comprises the arms, legs, pelvis and shoulder girdle

Appendix- a small, tubular, structure that's attached to the lower border of the cecum in the lower right quadrant of the abdomen

Applied ethic- the manner in which principles of ethics are incorporated into professional conduct

Arterioles- the smallest branches of arteries leading to the vast network of capillaries

Arteriosclerosis- a disease that causes the arteries to thicken, harden and calcify

Artery- a blood vessel, consisting of layers of tissue and smooth muscle, that carries blood away from the heart

Articular cartilage- a pearly white layer of specialized cartilage covering the articular surfaces (contact surfaces on the ends) of bones in synovial joints

Assault- unlawfully placing a pt in fear of bodily harm

ATP- the nucleotide involved in energy metabolism; used to store energy

Atrium- one of the two upper chambers of the heart

Automatic nervous system- the part of the nervous system that controls the involuntary activities of the body such as the heart rate, blood pressure and digestion of food

Automaticity- the ability of cardiac muscle cells to contract without stimulation from the nervous system

Axial plane- an imaginary line where the body is divided into top and bottom part

Axial skeleton- the part of the skeleton comprising the skull, vertebral column and rib cage

Axons- extensions of a neuron that carry impulses away from the nerve cell body to the dendrites (receivers) of another neuron

Backboard- a long, flat board made of rigid, rectangular material that is used to provide support to a pt who is suspected of having a hip, pelvic, spinal, or lower extremity injury; also called a spine board, trauma board, and longboard

Bacteria- microorganisms that reproduce by binary fission. Single-cell creatures reproduce rapidly. Some can form spores (encysted variants) when environmental conditions vary harsh

Barrier device- a protective item, such as a pocket mask with a valve, that limits exposure to the pt's body fluids

Base station- any radio hardware containing a transmitter and receiver that's located in a fixed place

Basic life support (BLS)- noninvasive emergency life-saving care that is used to treat conditions, including airway obstruction, resp arrest, and cardiac arrest

Basket stretcher- a rigid stretcher commonly used in technical and water rescues that surround and support the pt yet allows water to drain through holes in the bottom; also called a stokes litter

Battery- unlawfully touching a pt or providing emergency care without consent

Biceps- the large muscle that covers the front of the humerus

Bilateral- a body part or condition that appears on both sides of the midline

Bioethics- the study of ethics related to issues that arise in health care

Bloodborne pathogens- pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, Hepatitis B and human immunodeficiency virus (HIV)

Body mechanics- the relationship between the body's anatomic structure and the physical forces associated with lifting, moving and carrying; the ways the body moves to achieve a specific action

Brachial artery- the major vessel in the upper extremities that supplies blood to the arm

Bradycardia- a slow heart rate, Leeds's than 60 beats/min

Bradypnea- slow resp rate; an ominous sign in a child that indicates impending resp arrest

Brain stem- the area of the brain between the spinal cord and cerebrum, surrounded by the cerebellum; controls functions that are necessary for life, such as resp

Brain- the controlling organ of the body and center of consciousness; function include perception, control of reactions to the environment, emotional responses and judgment

Breach of confidentiality- disclosing information without proper authorization

Burnout- a combination of exhaustion, cynicism, and reduces performance resulting from long-term job stresses in health care and other high-stress professions

Carotid artery- the major artery that supplies blood to the heart and brain

Cellular telephone- a low-power portable radio that communicates through an interconnected series of repeater station called cells

Certification- a process in which a person, an institution, or a program is evaluated and recognized as meeting certain predetermined standards to provide safe and ethical care

Channel- an assigned frequencies that are bused to carry voice and/or data communications

Closed-ended questions- questions that can be answered in short or single-word responses

Combining vowel- a vowel used to combine two-word roots or a word root and suffix

Communication- the transmission of info to another person- verbally or through body language

Compassion fatigue- a stress disorder characterized by gradual lessening of compassion over time

Compensatory damages- damages awarded in a civil lawsuit that are intended to restore the plaintiff to the same condition that he or she was in prior to the incident

Competent- able to make rational decisions about personal well-being

Consent- permission to render care

Continuous quality improvement- a system of internal and external reviews and audits of all aspects of an EMS system aimed at improving outcomes

Continuum of care- the concept of consistent pt care across the entire health care team from first pt contact to pt discharge; working together with a unified goal resulting in improved individual and team performance, better and provider safety, and pt outcome

Contributory negligence- a legal defense that may be raised when the defendant thinks that the conduct of the plaintiff somehow contributed to any injuries or damage that were sustained by the plaintiff

Coronal plane- Imaginary plane where the body is divided into front and back parts

CQI- a system of internal and external reviews and audits of all aspects of an EMS system aimed at improving outcomes – Continuous Quality Improvement.

Credentialing- an established process to determine the qualification necessary to be allowed to practice a particular profession, or to function as an organization

Cumulative stress reactions- prolonged or excessive stress

Decontamination area- the designated area in a haz-mat incident where all pts and responders must be decontaminated before going to another area

Decontamination- the process of removing or neutralizing and properly disposing of Haz-mat from equipment, pts, and responders

Defamation- the communication of false info about a person that is damaging to that person's reputation or standing in the community

Depositions- oral questions asked for parties and witnessed under oath

Direct ground lift- a lifting technique that is used for pts who are found lying supine on the ground with no suspected spinal injury

Discovery- the phase of a civil lawsuit where the plaintiff and defense obtain info from each other that will enable the attorneys to have a better understanding of the case, and which will

assist in negotiating a possible settlement or in preparing for trial. Discovery includes depositions, interrogatories, and demands for production. Of records

Disinfection- the killing of pathogenic agents by direct application of chemicals

Do not resuscitate order (DNR)- written documentation by a physician giving permission to medical personnel not to attempt resuscitation in the event of cardiac arrest

Documentation- the recorded portion of the EMTs pt interaction, wither written or electronic. This becomes part of the pts permanent medical record

Duplex- the ability to transmit and receive simultaneously

Durable power of attorney for health care- a type of advance directive executed by a competent adult that appoints another individual to make medical treatment decisions on his or her behalf, in the event that the person making the appointment loses decision-making capacity

Duty to act- a medicolegal term relating to certain personnel who either by statues or by function have a responsibility to provide care

Early adult- a young adult age 19 to 40 years

Elder abuse- an action on the part of an older persons family member, caregiver, or other associated person that takes advantage of the older person's person, property, or emotional state

Emancipated minor- a person who is under the legal age in a given state but, because of other circumstances, is legally considered an adult

Emergency- a serious situation, such as injury or illness that threatens the life of a person or group of people and requires immediate interventions

Emergency doctrine- the principle of law that permits a health care provider to treat a pt in an emergency situation when the pt is incapable of granting consent because of an altered level of consciousness, disability, the effects of drugs or alcohol, or the pts age

Emergency medical care - immediate care or treatment

Emergency medical dispatcher (EMD)- a system that assists dispatchers in selecting appropriate units to respond to a particular call for assistance and provides callers with vital instructions unit the arrival of EMS crews

Emergency medical responders- a trained professional, such as a police officer, firefighter, lifeguard, or other rescuer, who may arrive first at the scene of an emergency to provide initial medical assistance

Emergency medical services (EMS)- a multidisciplinary system that represents the combined efforts of several professional and agencies to provide prehospital emergency care to the sick and injured

Emergency medical technician (EMT)- an individual who has training n basic life support, including automated external defibrillation, use of a definitive airway adjunct, and assisting pt with certain medications

Emergency move- a move in which the pt is dragged or pulled from a dangerous scene before assessment and care are provided

Emotional intelligence- the ability to understand and manage one's own emotions and properly respond to the emotion of others

EMT- administered medication- administration of medication by the EMT directly to the pt

Epidermis- the outer layer of skin, which is made up of cells that are sealed together to form a watertight protective covering for the body

Ethics- the philosophy of right and wrong, of moral duties and of ideal professional behavior

Ethnocentrism- when a person considers his or her own cultural values as more important when interacting with people of a different culture

Eustress- a beneficial response to a stressor

Evidence Based Medicine- an approach to medicine where decisions are based on well-conducted research, classifying recommendations based on the strength of the scientific evidence; also called science-based medicine

Expressed consent- a type of consent in which a pt gives verbal or nonverbal authorization for provision of care or transport

Extremity lift- a lifting technique that is used for pts who are supine or in a sitting position with no suspected extremity or spinal injuries

Eyes forward position- a head position in which the pts eyes are looking straight ahead, and the head and torso are in line

False imprisonment- the confinement of a person without legal authority or the persons consent

Federal Communications commission (FCC)- the federal agency that has jurisdiction over interstate and international telephone and telegraph service and satellite communications, all of which may involve EMS activity

Femoral artery- the major artery to the thigh, a continuation of the external iliac artery. It supplies blood to the lower abdominal wall, external genitalia, and legs. It can be palpated in the groin area

Femoral head- the proximal end of the femur, articulating with the acetabulum to form the hip joint

Femur- the thighbone; the longest and one of the strongest bones in the body

Fibula- the smaller of the two bones that form the lower leg, located on the lateral side

Field impression- the conclusion about the cause of the pts condition after considering the situation, history, and examination findings

Finance/ administration- in IC, the position in a incident responsible for accounting of all expenditures

Fire- responders vehicles- specialized vehicles used to transport EMS equipment and personnel to the scenes of medical emergencies

Flank- the region below the rib cage and above the hip

Flexible stretcher- a stretcher that is a rigid carry drive when secured around a pt but can be folded or rolled when not in used

Flexion- the bending of a joint

Foremen magnum- a large opening at the base of the skull through which the Brian connects to the spinal cord

Fowler position- an inclined position in which the head if the bed is raised

Fracture- a break in the continuity of a bone

Freelancing- when individual units or different organizations make independent and often inefficient decisions about the next appropriate action

Frontal bones- the bones of the cranium that form the forehead

Frontal plane- an imaginary plane where the body is divided into front and back parts

Gallbladder- a sac on the undersurface of the liver that collects bile from the liver and discharges it into the duodenum through the common bile ducts

GCS score (Glasgow coma scale score)- an evaluation tool used to determine level of consciousness, which evaluates and assigns point values (scores) for eye opening, verbal response, and motor response, which are then totaled; effective in helping predict pt outcomes

General impression- the overall initial impression that determines the priority for pt care; based on the pt's surroundings, the MOI, signs and symptoms, and the chief complaint

Glenoid fossa- the part of the scapula that joins with the mineral head to form the glenohumeral joint

Globe- the eyeball

Good Samaritan laws- statutory provision enacted by many states to protect citizens from liability for errors and omissions in giving good- faith emergency medical care, unless there is wanton, gross or willful negligence

Governmental immunity- legal doctrine that can protect an EMS provider from being sued or that may limit the amount of the monetary judgment that the plaintiff may recover; generally, applies only to EMS systems that are operated by municipalities or other governmental entities

Greater trochanter- a bony prominence on the proximal lateral side of the thigh, just below the hip joint

Gross negligence- conduct constitutes a willful or reckless disregard for a duty or standard of care

Group- in the context of EMS, a collection of individual health care providers working independently to help the pt

Handover-the transfer of pertinent pt info and the responsibility for the pt's care; often involves the physical movement of the pt and associated equipment; also known as handoff

Health care directive- a written document that specifies medical treatment for a competent pt, should he or she become unable to make decisions. Also known as an advance directive or a living will

Health care proxy- a type of advanced directive executed by a competent adult that appoints another individual to make medical treatment decisions on his or her behalf in the event that the person making the appointment loses decision-making capacity. Also known as a durable power of attorney for health care

Health information exchange (HIE)- a system that allows EMS providers to access relevant health data (ex. Past medical problems, medications, allergies, end-of-life decisions) avoid unnecessary duplication of effort in data entry and view pt outcomes related to hospital care

Health insurance portability and accountability act (HIPAA)- federal legislation passed in 1996. Its main effect in EMS is in limiting availability of pts health care info and penalizing violations of pt privacy

Hinge joints- joints that can bend and straighten but cannot rotate; they restrict motion to one plane

History taking- a step within the pt assessment process that provides details about the pts chief complaint and an account of the pts signs and symptoms

Hollow organs- structures through which materials pass, such as the stomach, small intestines, large intestines, ureters, and urinary bladder

Hormones- substances formed in specialized organs or glands and carried to another organ or group of cells in the same organism; they regulate many body functions, including metabolism, growth, and body temperature.

Host- the organism or individual that is attacked by the infecting agent

Humerus- the support bone of the upper arm

Implied consent- type of consent in which a pt who is unable to give consent is given treatment under the legal assumption that he or she would want treatment

In loco parentis- refers to the legal responsibility of a person or organization to take on some of the function and responsibilities of a parent

Index of suspicion- Awareness that unseen life-threatening injuries may exist when determining the mechanism of injury

Inferior- below a body part or nearer to the feet

Informed consent- Permission for treatment given by a competent pt after the potential risks, benefits and alternatives to treatment has been explained

Intellectual disability- a subset of development disability characterized by significant limitations in both intellectual functioning and skills needed for daily living

Interoperable communication system- a communication system that uses voice-over internet protocol (VoIP) technology to allow multiple agencies to communicate and transmit data

Interrogatories- written questions that the defense and plaintiff send to one another

Joint capsule- the fibrous sac that encloses a joint

Joint- the place where two bones come into contact

Jump kit- a portable kit containing items that are used in the initial care of the pt

Kidnapping- the seizing, confining, abducting, or carrying away of a person by force, including transporting a competent adult for medical treatment without his or her consent

Lacrimal glands- the glands that produce fluid to keep the eye moist; also called tear glands

Lactic acid- a metabolic by-product of the breakdown of glucose that accumulates when metabolism proceeds in the absence of oxygen (anaerobic metabolism)

Large intestine- the portion of the digestive tube that encircles the abdomen around the small bowel, consisting of the cecum, the colon, and the rectum, it helps regulate water balance and eliminate solid waste

Larynx- a complex structure formed by many independent cartilaginous structures that all work together; where the upper airway ends and the lower airway begins; also called the voice box

Lens- the transparent part of the eye through which images are focused on the retina

Lesser trochanter- the projection of the medial/superior portion of the femur

Leukotrienes- chemical substances that contribute to anaphylaxis; released by the immune system in allergic reactions

Libel- false and damaging info about a person that is communicated in writing

Licensure- the process whereby a competent authority, usually rather state, allows people to perform a regulated act

Life expectancy- the average number of years a person can be expected to live

Ligaments- bands of fibrous tissue that connect bones to bones. Ligaments support and strengthen a joint

Liver- a large, solid organ that lies in the right upper quadrant immediately below the diaphragm; it produces bile, stores glucose for immediate use by the body, and produces many substances that help regulate immune responses

Lumbar spine- the lower part of the back, formed by the lowest five non-fused vertebrae; also called the dorsal spine

Lumen- the inside diameter of an artery or other hollow structure

Lymph- a thin, straw-colored fluid that carries oxygen, nutrients, and hormones to the cells and carries waste product of metabolism away from the cells and back into the capillaries so that they may be excreted

Lymph nodes- tiny, oval-shaped structures located in various places along the lymph vessels that filter lymph

Lymphatic system- a passive circulatory system in the body that transports a plasma like liquid called lymph, a thin fluid that bathes the tissues of the body

Malleolus- a rounded bony prominence on either side of the ankle; also called the ankle bone

Mandible- the bone of the lower jaw

Manubrium- the upper quarter of the sternum

MAP- the average pressures within the circulatory system during one cardiac cycle

Mastoid process- the prominent bony mass at the base of the skull about 1 inch (2.5 CM) posterior to the external opening of the ear

Maxillae- the upper jawbones that assist in the formation of the orbit, the nasal cavity, and the palate and hold the upper teeth

MDT- a small computer terminal inside the ambulance that directly receives data from the dispatch center

Mean arterial pressures- the average pressure in the circulatory system during one cardiac cycle

Mechanism of injury (MOI) – the forces or energy transmission, applied to the body that cause injury

MED channels- VHF and UHF that the Federal Communications Commission has designated exclusively for EMS use

Medevac- medical evacuation of a patient by helicopter

Medial- parts of the body that lie closer to the midline; also called inner structures

Mediastinum- space within the chest contains the heart, major blood vessels, vagus, vagus nerve, trachea, major bronchi, and esophagus; located between the two lungs

Medical control- physician's instructions given directly by radio or cell phone (online/direct) or indirect by protocol/ guidelines (off-line/indirect), as the medical director or the service program

Medical director- the physician who authorizes or delegates to the EMT the authority to provide medical care in the field

Medical emergencies- emergencies that are not caused by an outside force, illnesses or conditions

Medicolegal- a term relating to medical jurisprudence (law) or forensic medicine

Medulla oblongata- nerve tissue that is continuous inferiorly with the spinal cord; serves as a conduction pathway for ascending and descending nerve tracts; coordinates heart rate, blood vessel diameter, breathing, swallowing, vomiting, coughing and sneezing

Melena- black, foul-smelling, tarry stool containing digested blood

Meninges- three distinct layers of tissues that surround and protect the brain and the spinal cord within the skull and spinal canal

Meningitis- an inflammation of the meningeal covering of the brain and spinal cord; it is usually caused by a virus or a bacterium

Meningococcal meningitis- an inflammation of the meningeal covering of the brain and spinal cord; can be highly contagious

Mental model- the pictures an individual has in his or her head of “what’s going on” in a given situation

Metatarsals- bones of the foot, Situated between the tarsals and phalanges

Midbrain- the part of the brain that is responsible for helping to regulate the level of consciousness

Middle adult- an adult age 41 to 60 years

Midline plane (midsagittal plane)- an imaginary vertical line drawn on the forehead through the nose and the umbilical (navel) to the floor, dividing the body into equal left and right halves

Mission-critical communication- any communication where disruption will result in the failure of the mission at hand

Mobil data terminal- a small computer terminal inside the ambulance that directly receives data from the dispatch

Mobile integrated health care (MIH)- a method of delivering health care that involves providing health care within the community rather than at a physician’s office or hospital

Morality- a code of conduct that can be defined by society, religion. Or a person, affecting character, conduct and conscience

Morgue supervisor- in IC, the person who worked with area medical examiners, coroners, and law enforcement agencies to coordinate the disposition of dead victims

Motor nerves- nerves that carry info from the central nervous system to the muscles of the body

Mutual aid response- an agreement between neighboring EMS systems to respond to mass-casualty incidents or disasters in each other’s region when local resources are insufficient to handle the response

Nares- the external openings of the nostrils. A single nostril opening is called a naris

Nasal airway- airway adjunct inserted into the nostril of an unresponsive pt with an altered level of consciousness who is unable to maintain airway patency independently

Nasopharynx- the part of the pharynx that lies above the level of the roof of the mouth. Or palate

National EMS scope of practice model- a document created by the national highway traffic safety administration (NHTSA) that outlines the skills performed by various EMS providers

Nature of illness (NOI)- the general type of illness a pt is experiencing

Neglect- refusal or failure of the part of the parent or caregiver to provide life necessities

Negligence- failure to provide the same care that a person with similar training would provide

Negligence per se- a theory may be used when the conduct of the person being sued is alleged to have occurred in clear violation of a statute

Nephrons- the basic filtering units on the kidneys

Nervous system- the system that controls virtually all activities of the body, both voluntary and involuntary

Neurons- the functional units of the nervous system; also called nerve cells

Noise- anything that dampens or obscures the true meaning of a message

Occipital bone- the most posterior bone of the cranium

Oncotic pressure- the pressure of water to move, typically into the capillary, as the result of the presence of plasma proteins

Open-ended questions- questions for which the pt must provide detail to give an answer

OPQRST- a mnemonic used to evaluate a pt's pain: onset, provocation/palliation, quality, region/radiation, severity, and timing

Optic nerve- a cranial nerve that transmits visual info to the brain

Orbit- the eye socket, made up of the maxilla and zygoma

Orientation- the mental status of a pt as measured by a memory of person (name), place (current location), time (current year, month, and approximate date), and event (what happened)

Oropharynx- a tubular structure that extends vertically from the back of the mouth to the esophagus and trachea

OSHA- the federal regulatory compliance agency that develops, publishes, and enforces guidelines concerning safety in the workplace

Oxygenation- the process of delivering oxygen to the blood by diffusion from the alveoli following inhalation into the lungs

Paging- the use of a radio signal and a voice or digital message that is transmitted to pagers ("beepers") or desktop monitor radios

Palmer- the forward-facing part of the head in the anatomic position

Pancreas- a flat, solid organ that lies below the liver and the stomach; it is a major source of digestive enzymes and produces the hormone insulin

Pandemic- an outbreak that occurs on a global scale

Paramedic- an individual who has extensive training in advanced life support, including endotracheal intubation, emergency pharmacology, cardiac monitoring, and advanced assessment and treatment skills

Parasympathetic nervous system- the part of the autonomic nervous system that controls vegetative functions such as digestive of food and relaxation

Parietal bone- the bones that lie between the temporal and occipital regions of the cranium

Parietal pleura- thin membrane that lines the chest cavity

Partial pressure- the term used to describe the amount of gas in air or dissolved in fluid, such as blood

Patella- the kneecap; a specialized bone that lies within the tendon of the quadriceps muscle

Pathogen- a microorganism that is capable of causing disease in a susceptible host

Pathophysiology- the study of how normal physiological processes are affected by disease

Patient autonomy- the right of a pt to make informed choices regarding his or her health care

Patient care report (PCR)- the legal documentation used to record all pt care activities. This report has direct pt care functions but also administrative and quality control functions. PCRs are also known as prehospital care reports

Pectoral girdle- the supporting structure for the arms, which attaches the arm to the axial skeleton. It comprises the clavicle and scapulae; also called the shoulder girdle

Pectoral girdle- the supporting structure from the leg, which serves to connect the legs to the axial skeleton

Perfusion- the flow of blood through body tissues and vessels

Pericardium- the fibrous sac that surrounds the heart

Perineum- the area of skin between the vagina and the anus

Peripheral nervous system (PNS)- the part of the nervous system that consists of 31 pairs of spinal nerves and 12 pairs of cranial nerves; these may be sensory nerves, motor nerves, or connecting nerves

Peristalsis- the wavelike contraction of smooth muscle by which the ureters or other tubular organ propel their contents

Peritoneal cavity- the abdominal cavity

Peritoneum- the membrane lines the abdominal cavity (parietal peritoneum) and covers the abdominal organs (visceral peritoneum)

Personal protective equipment (PPE)- protective equipment that blocks exposure to a pathogen or a hazardous material

Phalanges- the bones of the fingers and toes

Phrenic nerves- the two nerves that innervate the diaphragm: necessary for adequate breathing to occur

Physiology- the study of the normal functions of living organisms and their parts

Pin-indexing system- a system established for portable cylinders to ensure that a regulator is not connected by a cylinder containing the wrong type of gas

Pinna- the external, visible part of the ear

Plantar- the bottom surface of the foot

Plasma- a sticky, yellow fluid that carries the blood cells and nutrients and transports cellular waste material to the organs of excretion

Platelets- tiny, disc-shaped elements that are much smaller than the cells; they are essential in the initial formation of a blood clot, the mechanism that stops bleeding

Pleura- the serous membranes covering the lungs and lining the thorax, completely enclosing a potential space known as the pleural space

Pleural space- the potential space between the parietal pleura and the visceral pleura; described as “potential” because under normal conditions, the space does not exist

Pons- an organ that lies below the midbrain and above the medulla and contains numerous important nerve fibers, including those for sleep, resp., and the medullary resp center

Portable stretcher- a stretcher with a strong, rectangular, tubular metal frame and rigid fabric stretched across it

Position of function- a hand position in which the wrist is slightly dorsiflexed and all fingers' joints are moderately flexed

Positional asphyxia- restriction of chest wall movements and/or airway obstruction; can rapidly lead to sudden death

Posterior- the back surface of the body; the side away from you in the standard anatomic position

Posterior tibial artery- the artery just behind the medial malleolus; supplies blood to the foot

Power grip- a technique in which the stretcher or backboard is gripped by inserting each hand under the handle with the palm facing up and the thumb extended, fully supporting the underside of the handle on the curved palm with the fingers and thumb

Power lift- a lifting technique in which the EMT's back is held upright, with legs bent, and the pt is lifted when the EMT straightens the legs to raise the upper body and arms

PPE levels- indicates the amount and type of protective equipment that an individual's needs to avoid injury during contact with a hazardous material

Prefix- part of a term that appears before a word root, changing the meaning of the term

Primary service area (PSA)- the designated area in which the EMS agency is responsible for the provision of prehospital emergency care and transportation to the hospital

Prone- lying face down

Prostate gland- a small gland that surrounds the male urethra then it emerges from the urinary bladder; it secretes a fluid that is part of the ejaculatory fluid

Protected health information (PHI)- any info about health status, provision of health care, or payment for health care that can be linked to an individual. This is interpreted rather broadly and includes any part of a patient's medical record or payment history

Proximal- closer to the trunk

Proximate causation- when a person who has a duty abuses it, and causes harm to another individual, the EMT, the agency, and/or the medical director may be sued for negligence

Pubic symphysis- a hard, bony, and cartilaginous prominence found at the midline in the lowermost portion of the abdomen when the two halves of the pelvic ring are joined by cartilage at the joint with minimal motion

Pubis- one of three bones that fuse to form the pelvic ring

Public safety access point- a call center, staffed by trained personnel who are responsible for managing requests for police, fire, and ambulance services

Pulmonary artery- the major leading from the right ventricle of the heart to the lungs; carries oxygen-poor blood

Punitive damages- damages that are sometimes awarded in civil lawsuits when the conduct of the defendant was intentional or constituted a reckless disregard for the safety of the public

Pupil- the circular opening in the middle of the iris that admits light to the back of the eye

Quality control- oversight by the medical director to ensure the appropriate medical care standards are met by EMTs on each call

Radius- the bone on the thumb side of the forearm

Rapport- a trusting relationship that you build with your patient

Rectum- the lowermost end of the colon

Red blood cells- cells that carry oxygen to the body's tissues; also called erythrocytes

Referred pain – pain felt in an area of the body other than the area where the cause of pain is located

Renal pelvis- a cone-shaped area that collects urine from the kidneys and funnels it through the ureter into the bladder

Repeater- a special base station receiving that receives messages and signals on one frequency and then automatically retransmits them on a second frequency

Res Ipsa loquitur- when the EMT or an EMS system is held liable even when the plaintiff is unable to clearly demonstrate how an injury occurred

Resilience- the capacity of an individual to cope with and recover from distress

Reticular activating system(RAS)- located in the upper brain stem; responsible for maintenance of consciousness, specifically one's level of arousal

Retina- the light-sensitive area of the eye when images are projected; a layer of cells at the back of the eye that changes the light image into electric impulses. Which are carried by the optic nerve to the brain

Retroperitoneal- behind the abdominal cavity

Retroperitoneal space- the space between the abdominal cavity and the posterior abdominal wall, containing the kidneys, large vessels, and part of the gastrointestinal tract

Retroperitoneum- the potential space located posterior to the peritoneal cavity of the abdomen

Sacroiliac joint- the connective point between the pelvis and the vertebral column

Sacrum- one of three bones (sacrum and two pelvic bones) that make up the pelvic ring; consists of five fused sacral vertebrae

Sagittal plane- an imaginary line when the body is divided into left and right parts

Salivary glands- the glands that produce saliva to keep the mouth and pharynx moist

Scalp- the thick skin covering the cranium, which usually bears hair

Scanner- a radio receiver that searches or scans across several frequencies until the message is completed; the process is then repeated

Scapula- the shoulder blade

Sciatic nerve- the major nerve to the lower extremities; controls much of muscle functions in the leg and sensation in most of the leg and foot

Sclera- the tough, fibrous, white portion of the eye that protects the more delicate inner structures

Scoop stretcher- a stretcher that is designed to be split into 2 or 4 sections that can be fitted around a pt who is lying on the ground or other relatively flat surface; Also called an orthopedic stretcher

Scope of practice- most commonly defined by state law; outlines the core that the EMT is able to provide for the pt

Sebaceous glands- glands that produce an oily substance called sebum, which discharges along the shaft of the hair

Sensory nerves- the nerves that carry sensations such as touch, taste, smell, heat, cold, and pain from the body to the central nervous system

Simplex- single- frequency radio; transmissions can occur in either direction not simultaneously; when one party transmits, the other can only receive, and the party that is transmitting is unable to receive

Situational awareness- knowledge and understanding of one's surroundings and the ability to recognize potential risks to safety or the pt or EMS team

Size-up- the on scene process of info gathering an scene evaluation to determine appropriate strategies and tactics to manage an emergency

Skeletal muscle- muscle that is attached to bones and usually crosses at least one joint; striated, or voluntary muscle

Skeletal system- the framework of the body, composed of bones and other connective tissues, that supports and protects internal organs and other body tissues

Slander- false and damaging info about a person that is communicated by spoken word

Small intestine- the portion of the digestive tube between the stomach and the cecum, consisting of the duodenum, jejunum and ileum

Smooth muscles- involuntary muscle; is constitutes the bulk of the gastrointestinal tract and is present in nearly every organ to regulate automatic activity

Solid organs- solid masses of tissue where much of the chemical work of the body takes place (ex. Liver, spleen, pancreas, and kidneys)

Solution- a liquid mixture that cannot be separated by filtering or allowing the mixture to stand

Sphygmomanometer- a device used to measure BP

Spinal cord- an extension of the brain, composed of virtually all the nerves carrying messages between the brain and the rest of the body. It lies inside of and is protected by the spinal canal

Spontaneous respirations- breathing that occurs without assistance

Stair chair- a lightweight folding device that is used to carry a conscious, seated pt up or down stairs

Standard of care- written, accepted levels of emergency care expected by reason of training and profession; written by legal or professional organization so that pts. are not exposed to unreasonable risk of harm

Standard precautions- protective measures that have traditionally been developed by CDC for use in dealing with objects, blood, body fluids and other potential exposure risks of communicable disease

Standing orders- written documentation, signed by the EMS systems medical director, that outlines specific directions, permissions and sometimes prohibitions regarding patient care; also called protocols

Star of life- the six-pointed star emblem that identifies vehicles that meets federal specifications as licensed or certified ambulances

Statute of limitation- the time within which a legal case must be commenced

Sternocleidomastoid muscles- the muscles on either side of the neck that allows movement of the head

Sternum- the breastbone

Stratum corneum- the outmost layer of the skin

Stroke Volume (SV)- the volume of blood pumped forward with each ventricular contraction

Suffix- the part of a term that comes after the word root, at the end of the term

Superficial- closer to or on the skin

Superior- above a body part or nearer to the head

Superior vena cava- one of the two largest veins in the body, carries blood from the upper extremity, head, neck, and chest into the heart

Supine- lying face up

Swathe- a bandage that passes around the chest to secure an injured arm to the chest

Sweat glands- the glands that secrete sweat, located in the dermal layer of the skin

Sympathetic nerve system- the part of autonomic nerve system that controls active functions such as responding to fear (also known as fight-or-flight system)

Symphyses- joints that have grown together to form a very stable connection

Systemic circulation- the portion of the circulatory system outside of the heart and lungs

Systemic vascular resistance (SVR)- the resistance that blood must overcome to be able to move within the blood vessels; related to the amount of dilation or constriction in the blood vessels

Systole- the contraction, or period of contraction of the heart, especially that of the ventricles

Systolic pressure- the increased pressure in an artery with each contraction of the ventricles (systole)

Tachycardia- a rapid heart rate, more than 100 beats/min

Targus- the small, rounded, fleshy bulge that lies immediately anterior to the ear canal

Tarsals- the group of bones situated between the lower leg bones (ie. Tibia and fibula) and the metatarsal bones of the foot

Team- in the context of EMS, a group of health care providers who are assigned specific roles and are working interdependently in a coordinated manner under a designated leader

Team leader- the team member who provides role assignments, coordination, oversight, centralized decision making, and support for the team to accomplish their goals and achieve desired results

Temporal bones- the lateral bones on each side of the cranium; the temples

Temporomandibular joint (TMJ)- the joint formed where the mandible and cranium meet, just in front of the ear

Tendons- the fibrous connective tissue that attaches muscles to bone

Testicle- a male genital gland that contains specialized cells that produce hormones and sperm

Therapeutic communication- verbal and nonverbal communication techniques that's encourage pts to express their feelings and to achieve a positive relationship

Thoracic cage- the chest or rib cage

Thoracic spine- the 12 vertebrae that lies between the cervical vertebrae and the lumbar vertebrae. One pair of ribs is attached to each of these vertebrae

Thorax- the chest cavity that contains the heart, lungs, esophagus and great vessels

Thyroid cartilage- a firm prominence of cartilage that forms the upper part of the larynx, the Adam's apple

Tibia- the shine one; that larger of the two bones of the lower leg

Topographic anatomy- the superficial landmarks of the body that serve as guides to the structures that lie beneath them

Torts- worn full acts that give rise to a civil lawsuit

Trachea- the windpipe; the main trunk for air passing to and from the lungs

Triceps- the muscle in the back of the upper arm

Trunking- telecommunication system that allows a computer to maximize utilization of a group of frequencies

Trust versus mistrust- the stage of development from birth to approx. 18 months of age, during which infants gain trust in their parents or caregivers if their world is planned, organized, and routine

Tunica media- the middle and thickest layer of tissue of a blood vessel wall, composed of elastic tissue and smooth muscle cells that allow the vessels to expand or contract in response to changes in BP and tissue demand

Turbinates- layers of bone within the nasal cavity

Turgor- the ability of the skin to resist deformation; tested by gently pinching skin on the forehead or back of the hand

Tympanic membrane- the eardrum; a thin, semitransparent membrane in the middle ear that transmits sounds vibrations to the internal ear by means of an auditory ossicle

Ulna- the inner bone of the forearm, on the side opposite the thumb

Ultra -high frequency (UHF)- radio frequencies between 300 and 3,000 MHz

Vasoconstriction- narrowing of a blood vessel

Veins- the blood vessels that carry blood from the tissues to the heart

Ventral- the anterior surface of the body

Ventricle- one of the two lower chambers of the heart

Venules- very small, thin-walled blood vessels

Vertebrae- the bones of the vertebral column

Vertebral column- the structure formed by the 33 vertebrae, separated by intervertebral disks. It houses and protects the spinal cord; also called the spinal column

Very high frequency (VHF)- radio frequencies between 30 and 300 MHz; the VHF spectrum is further divided into high and low bands

Video laryngoscopy- visualization of the vocal cords, and thereby placement of the endotracheal tube, that is facilitated by use of a video camera and monitor

Viruses- germs that require a living host to multiply and survive

Vital signs- the key signs that are used to evaluate the pt's overall condition, including resp, pulse, blood pressure, level of consciousness, and skin characteristics

Vocal cords- thin white bands of tough muscular tissue that are lateral borders of the glottis and serve as the primary center for speech production

Wellness- the active pursuit of a state of good health

Wheeled ambulance stretcher- a specially designed stretcher that can be rolled along the ground. A collapsible undercarriage allows it to be loaded into the ambulance; also called a ambulance stretcher

White blood cells- blood cells. That has a role in the body's immune defense mechanisms against infection; also called leukocytes

Word root- the main part of a term that contains the primary meaning

Work- the measure of force over distance

Xiphoid process- the narrow, cartilaginous lower tip of the sternum

Zygomas- the quadrangular bones of the cheek, articulating with the frontal bone, the maxillae, the zygomatic processes of the temporal bone, and the great wing of the sphenoid bone

Wallenpaupack Area School District Curriculum	
COURSE: Protective Service II – Emergency Medical Technician	GRADE/S: 10-12
UNIT 2: Public Health	TIMEFRAME:

**PA COMMON CORE/NATIONAL STANDARDS: National Highway Traffic and Safety Administration (NHTSA) Education Standards 2021.
NHTSA National Standard Curriculum 2021.
NHTSA Scope of Practice Model 2021.**

UNIT OBJECTIVES (SWBATS): Applies knowledge of the principles of public health epidemiology including public health emergencies, public health monitoring, health promotion and illness and injury prevention.

- EMS roles in public health
- Infection prevention and control
- Human trafficking
- EMS EHR reporting and data collection
- Governmental/ nongovernmental roles & resources
- Public health mission and goals
- Social, geographic, economic, demographic determinants of health
- Patient and community education
- Injury prevention and wellness
- Unique pediatric, geriatric and special populations public health concerns
- Screenings and vaccinations/ immunizations

INSTRUCTIONAL STRATEGIES/ACTIVITIES: Didactic instruction flowed by skills laboratory.

Didactic

- Lecture presentation
- Oral Discussion

Laboratory

- Skills Demonstration
- Equipment demonstration
 - Safety Review

Scenarios

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

Assessment in Action exercises
Interactive Lectures
Written (online) test
Written (online) quiz
Laboratory Reflection
Workbook Assignments
Reading Logs
Online Discussion Questions

Simulated NREMT Test Question

Cornell Notes

Classroom Behavioral Affective Domain Evaluation

Laboratory Behavioral Affective Domain Evaluation

DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

RESOURCES (Technology Based Resources, Text Resources, etc.):

Chapter Slides

E-book

Audio book

Supplemental online videos (explanation, demonstration & visualization of anatomy, diseases, traumatic injuries, task performance, equipment use)

Test Prep Simulator

KEY VOCABULARY:

Activities of daily living- The basic activities a person usually accomplishes during a normal day, such as eating, dressing, and bathing

Bloodborne pathogens- pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, Hepatitis B and human immunodeficiency virus (HIV)

Botulinum- produced by bacteria, this is the most potent neurotoxin known. When introduced into the body, this neurotoxin affects the nervous system's ability to function and cause botulism

Buboes- enlarged lymph nodes (up to the size of a tennis ball) that are characterized in people infected with the bubonic plague

Bubonic plague- bacterial infection that affects the lymphatic system. Transmitted via rodents and fleas. Characterized by acute malaise, fever, and the formation of tender, enlarged, inflamed lymph node that appears as lesions called buboes. Also called the Black Death

Center for Disease Control (CDC)- the primary federal agency that conducts and supports public health activities in the US. CDC is part of the US department of human's services

Child abuse- a general term applying to all forms of abuse and neglect of children

Chlamydia- a sexually transmitted disease caused by the bacterium (Chlamydia trachomatis)

Communicable disease- a disease that can be spread from one person or species to another

Community paramedicine- a health care model in which experienced paramedic receives advanced training to equip them to provide additional services in the prehospital environment, such as health evaluations, monitoring or chronic illness or conditions, and pt advocacy

Contagious- an infectious disease that spreads from one human to another, communicable

Contamination- the presence of infectious organisms on or in objects such as dressing, water, food needles, wounds, or a pt body

COVID-19- a resp disease caused by the virus SARS-CoV-2. The virus is a coronavirus, similar to the one that causes the common cold

Cross- contamination- occurs when a person is contaminated by an agent because of coming in contact with another contaminated person

Cultural imposition- when one person imposes his or her beliefs, values, and practices on another because he or she believes his or her ideals are superior

Epidemic- occurs when new cases of a disease in a human population substantially exceed the number of expected based on recent experience

Public health- the branch of medicine that is focused on examining the health needs of entire populations with the goal of preventing health problems

Wallenpaupack Area School District Curriculum	
COURSE: Protective Service II – Emergency Medical Technician	GRADE/S: 10-12
UNIT 3: Pharmacology	TIMEFRAME:

**PA COMMON CORE/NATIONAL STANDARDS: National Highway Traffic and Safety Administration (NHTSA) Education Standards 2021.
NHTSA National Standard Curriculum 2021.
NHTSA Scope of Practice Model 2021.**

UNIT OBJECTIVES (SWBATS): Applies knowledge of the medications the EMT may administer to a patient during an emergency and chronic or maintenance medications the patient may be taking.

Principles of Pharmacology

- Medication safety
- Medication legislation
- Naming
- Classifications
- Storage and security
- Medication interactions
- Adverse drug reactions
- Metabolism and excretion
- Mechanism of action
- Medication response relationships

Medication Administration

- Use a Medication Cross Check procedure
- Use an autoinjector
- Use a unit-dose, premeasured intranasal device
- Administer medications to a patient
- Provide pain management, including ethical and safety considerations
- Routes of administration

Acute Medications

- Names
- Effects
- Indications
- Contraindications

- Side effects
- Routes of administration
- Dosages
- Actions
- Complications
- Interactions

Chronic or Maintenance Medications

- Specific medication classes to be determined locally
- Class names
- Class indications
- Class complications
- Class side effects
- Polypharmacy

INSTRUCTIONAL STRATEGIES/ACTIVITIES: Didactic instruction flowed by skills laboratory.

Didactic

- Lecture presentation
- Oral Discussion

Laboratory

- Skills Demonstration
- Equipment demonstration
 - Safety Review

Scenarios

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

Assessment in Action exercises

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Classroom Behavioral Affective Domain Evaluation

Laboratory Behavioral Affective Domain Evaluation

DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

Chapter Slides

E-book

Audio book

Supplemental online videos (explanation, demonstration & visualization of anatomy, diseases, traumatic injuries, task performance, equipment use)

Test Prep Simulator

KEY VOCABULARY:

(SL) sublingual- under the tongue; a medication delivery route

Absorption- The process by which medications travel through bloody tissues until they reach the bloodstream

Acetylsalicylic acid- a medication that us an antipyretic (reduces fever), analgesic (reduces pain), anti-inflammatory (reduces inflammation), and a potent inhibitor of platelet aggregation (clumping)

Action- the therapeutic effect of medication on the body

Addiction- a state of overwhelming obsession or physical need to continue the use of a substance

Adverse effects- any unwanted clinical result of a medication

Antagonist-a medication that binds to a receptor and blocks other medications

Antibiotic- a medication used to treat infections caused by a bacterium

Anticoagulant- a medication that impairs the ability of blood to clot

Antidote- a substance that is used to neutralize or counteract a poison

Antidote treatment nerve agent auto-injector- a nerve agent antidote kit containing atropine and pralidoxime and chloride; delivered as a single dose through one needle

Antifungal- a medication used to treat infections caused by a fungus

Antiplatelet- a medication that prevents blood platelets from clumping or sticking together

Antipyretics- medications that treat or reduce a fever

Antivenin- a serum that's counteracts the effects of venom from an animal or insect

Aspirin (ASA)- a medication that is a antipyretic (reduces fever), analgesic (reduces pain), anti-inflammatory (reduces inflammation) and a potent inhibitor of platelet aggregation (clumping)

Beta-adrenergic receptors- portions of the nervous system that, when stimulated, can cause an increase in the force of contractions of the heart, an increased heart rate, and bronchial dilation

Chemoreceptors- monitor the levels of oxygen, carbon dioxide, and pH of the cerebrospinal fluid and then provide feedback to the resp centers to modify the rate and depth for breathing based on the body's needs at any given time

Contraindications- conditions that make a particular medication n or treatment inappropriate because it would not help, or may harm, a pt

Dose- the amount of medication given based on the pts size and age

Duration- the amount of time that clinical effects of a medication last

Elimination- the process of removing a medication or chemical from within the body

Enteral medications- medications that enter the body through the digestive system

Epinephrine- a medication that increases HR (heart rate) and BP but also eases breathing problems by decreasing muscle tone of the bronchiole tree; a substance produced by the body (commonly called adrenaline), and a drug produced by pharmaceutical companies that increases pulse rate and BP; the drug of choice for an anaphylactic reaction

Generic name- the original chemical name of a medication (in contrast to one of its proprietary or trade names); the name is not capitalized

Glucose- one of the basic sugars; it is the primary fuel, in conjunction with oxygen, for cellular metabolism

Hypnotic- a sleep inducing effects or agent

IM injection (intramuscular Injection)- an injection into a muscle; a medication acquiring a disease

Indication- the therapeutic use for a specific medication

Intranasal (IN)- a delivery route in which a medication is pushed through a specialized atomizer device called a mucosal atomizer device (MAD) into the nares

Intraosseous Injection (IO Injection)- an Injection into the bone; a medication delivery route

Intravenous Injection (IV Injection)- an injection directly into a vein; a medication delivery route

Intravenous therapy- The delivery of medication directly into a vein

MDI- a miniature spray canister used to direct medications through the mouth and into the lungs

Medication- a substance that is used to treat or prevent disease or relieve pain

Medication error- inappropriate use of medication that could lead to patient harm

Metered-dose inhaler (MDI)- a miniature spray canister used to direct medication through the mouth and into the lungs

Methicillin-resistant staphylococcus aureus- a bacterium that can cause infection in different parts of the body and is often resistant to commonly used antibiotics; it is transmitted by different routes including the respiratory route, and can be found on the skin, in surgical wounds and in the bloodstream, lungs, and urinary tract

Mucosal atomizer device- a device that is used to change a liquid medication into a spray and push it into the nostril

Narcotic- a drug that produces sleep or altered mental consciousness

Nitroglycerin- a medication that increases cardiac perfusion by causing blood vessels to dilate; EMTs may be allowed to assist the patient to self-administer the medication

Norepinephrine- a neurotransmitter and drug sometimes used in the treatment of shock; produces vasoconstriction through its alpha-stimulator properties

Onset of action- the amount of time from the administration of medication to the onset of clinical effects

Opiate- a subset of the opioid family, referring to natural, non-synthetic opioids

Opioids- a synthetically produced narcotic medication, drug, or agent like the opiate morphine, but not derived from opium; used to relieve pain

Oral- by mouth; a medication delivery route

Oral glucose- a simple sugar that is readily absorbed by the bloodstream; it is carried out the EMD unit

OTC medication- medication that may be purchased directly by a pt without a prescription

Overdose- an excessive quantity of a drug that, when taken or administered, can have toxic or lethal consequences

Over-the-counter medication- medications that may be purchased directly by a pt without a prescription

Oxygen- a gas that all cells need for metabolism; the heart and brain, especially, cannot function without oxygen

Oxygen toxicity- a condition of excessive oxygen consumption resulting in cellular and tissue damage

Parenteral medications- medications that enter the body by a route other than the digestive tract, skin, or mucous membranes

Patient-assisted medications- when the EMT assists the pt with the administration of his or her own medication

Peak- the point or period when the maximum clinical effect of a drug is achieved

Peer-assisted medication- when the EMT administers medication of his or her own medication

Per os (latin for "by mouth" (PO) - through the mouth; a medication delivery route; same as oral

Per rectum- through the rectum; a medication delivery route

Pharmacodynamics- the process by which a medication works in the body

Pharmacokinetics- the processes that the body performs on a medication, including how it is absorbed, distributed, possibly changed and eliminated

Pharmacology- the study of the properties and effects of medication

Poison- a substance whose chemical action could damage structures or impair function when introduced into the body

Polypharmacy- the use of multiple medications on a regular basis

PR 'per rectum'- through the rectum; a medication delivery route

Prescription medications- medications that are distributed to pt only by pharmacists according to a physician's order

Sedative- a substance that decreases activity and excitement

Small-volume nebulizer- a resp device that holds liquid medication that is turned into a fine mist. The pt inhales the medication into the airway and lungs as a treatment for conditions such as asthma

Stimulant- an agent that produces an excited state

Subcutaneous injection (SQ)- injection into the fatty tissue between the skin and muscle; a medication delivery route

Suspension- a mixture of ground particles that are distributed evenly throughout a liquid but do not dissolve

Therapeutic effect- the desired or intended effects a medication is expected to have on the body

Tolerance- the need for increasing amounts of a drug to obtain the same effects

Topical medication- lotions, creams, and ointments that are applied to the surface of the skin and affect only the area, a medication delivery route

Trade name- the brand name that a manufacturer gives a medication; the name is capitalized

Transcutaneous- through the skin; a medication delivery route

Transdermal- through the skin; a medication delivery route

Unintended effects- actions that are undesirable but pose little risk to the pt

Untoward effects- actions that can be harmful to the pt

Vancomycin-resistant enterococci- bacteria that are normally present in the human intestines and the female reproductive tract, but which can cause infection, and which are resistant to the antibiotic vancomycin

Wallenpaupack Area School District Curriculum	
COURSE: Protective Service II – Emergency Medical Technician	GRADE/S: 10-12
UNIT 4: Airway Management, Respiration & Ventilation	TIMEFRAME:

**PA COMMON CORE/NATIONAL STANDARDS: National Highway Traffic and Safety Administration (NHTSA) Education Standards 2021.
NHTSA National Standard Curriculum 2021.
NHTSA Scope of Practice Model 2021.**

UNIT OBJECTIVES (SWBATS): Applies knowledge of anatomy and physiology to patient assessment and management in order to assure a patent airway, adequate mechanical ventilation and respiration for patients of all ages.

Airway Management - (Including age-related variations in pediatric and geriatric patients)

- Airway anatomy
- Airway assessment
- Techniques of assuring a patent airway

Respiration - (Including age-related variations in pediatric and geriatric patients)

- Anatomy of the respiratory system
- Physiology and pathophysiology of respiration
- Pulmonary ventilation
- Oxygenation
- Respiration
- External
- Internal
- Cellular
- Assessment and management of adequate and inadequate respiration
- Supplemental oxygen therapy

Ventilation - (Including age-related variations in pediatric and geriatric patients)

- Assessment and management of adequate and inadequate ventilation
- Effect of ventilation on cardiac output

INSTRUCTIONAL STRATEGIES/ACTIVITIES: Didactic instruction flowed by skills laboratory.

Didactic

- Lecture presentation
- Oral Discussion

Laboratory

- Skills Demonstration
- Equipment demonstration
 - Safety Review

Scenarios

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

Assessment in Action exercises
 Interactive Lectures
 Written (online) test
 Written (online) quiz
 Laboratory Reflection
 Workbook Assignments
 Reading Logs
 Online Discussion Questions
 Simulated NREMT Test Question
 Cornell Notes
 Classroom Behavioral Affective Domain Evaluation
 Laboratory Behavioral Affective Domain Evaluation

DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

RESOURCES (Technology Based Resources, Text Resources, etc.):

Chapter Slides
 E-book
 Audio book
 Supplemental online videos (explanation, demonstration & visualization of anatomy, diseases, traumatic injuries, task performance, equipment use)
 Test Prep Simulator

KEY VOCABULARY:

Adventitious breath sounds- abnormal breath sounds such as wheezing, stridor, rhonchi, and crackles

Agonal gasps- an abnormal breathing pattern characterized by slow, gasping breaths, sometimes seen in pts in cardiac arrest

Aspiration- the context of the airway, the introduction of vomitus to other foreign materials into the lungs.

Asthma- an acute spasm of the smaller air passages, called bronchioles, associated with excessive mucus production and with swelling of the mucous lining of the respiratory passages

Ataxic respirations- irregular, ineffective respirations that may or may not have an identifiable pattern

Auscultate- to listen to sound within an organ with a stethoscope

Automatic Transport Ventilator- a ventilation device attached to a control box that allows the variables of ventilation to be set. It frees the EMT to perform other tasks while the pt is being ventilated

Bag-mask device (BMD)- a device with a one-way valve and a face mask attached to a ventilation bag; when attached to a reservoir and connected to oxygen, it delivers more than 90% supplemental oxygen

Breath-holding syncope- loss of consciousness caused by a decreased breathing stimulus

Bronchioles- subdivision of the smaller bronchi in the lungs; made of smooth muscle and dilate or constricted on response to various stimuli

Bronchiolitis- inflammation of the bronchioles that usually occurs in children younger than 2 years and is often caused by the resp syncytial virus

Bronchitis- an acute or chronic inflammation of the lung that may damage lung tissue; usually associated with cough and production of sputum and, depending on its cause, sometimes fever

Capnography- a noninvasive method to quickly and efficiently provide info on a pts ventilatory status, circulation, and metabolism; effectively measures the concentration of carbon dioxide in expired air over time

Capnometry- the use of a capnometer, a device that measures the amount of expired carbon dioxide

Carbon dioxide (CO₂)- a component of air that typically makes up .03% of air at sea level; also, a waste product exhaled during expiration but the resp system

Carbon dioxide retention- A condition characterized by a chronically high blood level of carbon dioxide in which the resp center no longer responds to high blood levels of carbon dioxide

Carbon monoxide (CO)- an odorless, colorless, tasteless, and highly poisonous gas that results from incomplete oxidation of carbon in combustion

Cardiac Output- a measure of the volume of blood circulated by the heart in 1 minute, calculated by multiplying the stroke volume by the heart rate

Carotid artery- the major artery that supplies blood to the heart and brain

Central neurogenic hyperventilation- an abnormal breathing pattern with increased intracranial pressure that is characterized by deep, rapid breathing; this pattern is similar to Kussmaul resp, but without an acetone breath odor

Cervical spine- the portion of the vertebral column consisting of the first seven vertebral that lie in the neck

Chemoreceptors- monitor the levels of oxygen, carbon dioxide, and pH of the cerebrospinal fluid and then provide feedback to the resp centers to modify the rate and depth for breathing based on the body's needs at any given time

Cheyene-Stroke resp- a cyclical pattern of abnormal breathing that increases and then decreased in rate and depth, following by a period of apnea

Compliance- the ability of the alveoli to expand when air is drawn in during inhalation

Continuous positive airway pressure (CPAP)- a method of ventilation used primarily in the treatment of critically ill pts with resp distress; can prevent the need for endotracheal intubation

Contraindications- conditions that make a particular medication or treatment inappropriate because it would not help, or may actually harm, a pt

Crackles- crackling, rattling breath sounds that signal fluid in the air spaces of the lungs

Cricoid cartilage- a firm of cartilage that forms the lower part of the larynx

Cricothyroid membrane- a thin sheet of fascia that connects the thyroid and cricoid cartilage that make up the larynx

Cyanosis- a blue skin discoloration that is caused by a reduced level of oxygen in the blood. Although paleness, or a decrease in blood flow, can be difficult to detect in dark-skinned people, it may be observed by examining mucous membranes inside the inner lower eyelid and capillary refill. Or general observation, the pt may appear ashen or gray

Dead space- any portion of the airway that does not contain air and cannot participate in gas exchange, such as a trachea and bronchi

Diaphragm- a muscular dome that forms the undersurface of the thorax, separating the chest from the abdominal cavity. Contraction of this (and chest wall muscles) bring air into the lungs. Relaxation allows air to be expelled from the lungs

Diffusion- movement of a gas from an area of higher concentration to any area of lower concentration

Direct laryngoscopy- visualization of the airway with a laryngoscope

Dyspnea- shortness of breath or difficulty breathing

Endotracheal intubation (ETT)- insertion of an endotracheal tube directly through the larynx between the vocal cords and into the trachea to maintain and protect an airway

End-tidal CO₂ (EtCO₂)- the amount of carbon dioxide present at the end of a breath

Epiglottis- a thin, leaf-shaped valve that allows air to pass into the trachea but prevents food and liquid from entering

Esophageal intubation- improper placement of an advanced airway device into the esophagus rather than into the trachea

Exhalation- the passive part of the breathing process in which the diaphragm and the intercostal muscles relax, forcing air out of the lungs

Expiratory reserve volume- the amount of air that can be exhaled following a normal exhalation; average volume is about 1,200 mL in the average adult man

External respiration- the exchange of gases between the lungs and the blood cells in the pulmonary capillaries; also called pulmonary respiration

Gag reflex- a normal reflex mechanism that causes retching; activated by touching the soft palate or the back of the throat

Glottis- the space in between the vocal cords that is the narrowest portion of the adult's airway; also called the glottis opening

Good air exchange- a term used to distinguish the degree of distress in a pt with a mild airway obstruction. With good air exchange, the pt is still conscious and able to cough forcefully, although wheezing may be heard

Gum elastic bougie- a flexible device that is inserted between the glottis under direct laryngoscopy; the endotracheal tube is treaded over the device, facilitating its entry into the trachea

Head tilt-chin lift maneuver- a combination of two movements to open the airway by tilting the forehead and lifting the chin; not used for trauma pts

Hypercapnia- an abnormally high level of carbon Dioxide in the bloodstream; also called hypercarbia

Hypercarbia- increased carbon dioxide level on the bloodstream \

Hyperventilation- rapid or deep breathing that lowers the blood carbon dioxide level below normal; may lead to increased intrathoracic pressure, decreased venous return, and hypotension when associated with bag-mask device use

Hyperventilation syndrome- this syndrome occurs in the absence of physical problems. The resp of a person who is experiencing hyperventilation syndrome may be as high as 40 shallow breaths/min or as low as only 20 very deep breaths/min. This syndrome is often associated with panic attacks

Hypoxia- deficient oxygen concentration in the tissue

Hypoxia drive- a condition in which chronically low levels of oxygen in the blood stimulates the resp drive; seen in pts with chronic lung diseases

Impedance threshold device- a valve device placed between the endotracheal tube and a bag-mask device that limits the amount of air entering the lungs during the recoil phase between chest compression

Inhalation- the active, muscular part of breathing that draw air into the airway and lungs; a medication

Inspiratory reserve volume- the amount of air that can be inhaled after normal inhalation; the amount of air that can be inhaled in addition to the Normal tidal volume

Internal respiration- the exchange of gases between the blood cells and the tissues

Intrapulmonary Shunting- bypassing of oxygen-poor blood past nonfunctional aveoli to the left side of the heart

Jaw-thrust maneuver- technique to open the airway by placing the fingers behind the angle of the jaw and bringing the jaw forward; used for pts who may have a C-spine injury

Kussmaul respirations- deep, rapid breathing; usually the result of an accumulation of certain acids when insulin is not available in the body

Labored breathing- the use of muscles of the chest, back and abdomen to assist in expanding the chest; occurs when air movement is impaired

Mild airway obstruction- occurs when a foreign body partially obstructs the pts airway. The pt is able to move adequate amounts of air, but also experiences some degree of resp distress

Minute volume- the volume of air that moves in and out of the lungs per minute; calculated by multiplying the tidal volume and resp rate; also called minute ventilation

Mucous membranes- the linings of body cavities directly or indirectly with the environment outside the body

Mucus- the watery secretion of the mucous membranes that lubricates the body openings

Nasal cannula (NC)- an oxygen-delivery in which oxygen flows through two small, tub-like prongs that fits into the pts nostrils; delivers 24% to 44% supplemental oxygen, depending on the flow rate

Nasopharyngeal airway (NPA)- airway adjunct inserted into the nostril of an unresponsive pt or a pt with a altered level of consciousness who is unable to maintain airway patency independently

Nonrebreathing Mask (NRM)- a combination mask and reservoir bas system that is preferred to give oxygen in the prehospital setting; delivers up to 90% inspired oxygen and prevents inhaling the exhaled gases (carbon dioxide)

Oropharyngeal airway (OPA)- airway adjunct inserted into the mouth of an unresponsive pt to keep the tongue from blocking the upper airway and to facilitate suctioning the airway, if necessary

Paroxysmal nocturnal dyspnea- severe shortness of breath, especially at night after several hours of reclining; the person is forced to sit up to breathe.

Patent- open, clear of obstruction

Poor air exchange- a term bused to describe the degree of distress in a pt with a mild airway obstruction, with poor air exchange, the pt often has a weak, ineffective cough, increased difficulty breathing, or possible cyanosis and may produce a high-pitched noise during inhalation (stridor)

Preoxygenation- the process of providing oxygen, often in combination with ventilation, prior to intubation in order to rebase the oxygen levels of body tissues; a critical step in advanced airway management. This extends the time during which an advanced airway can be placed in an apneic pt, because the more oxygen that is available in the alveoli, the longer the pt can maintain adequate gas exchange in the lungs during the procedure

Pulmonary edema- a buildup of fluids in the lungs, often as a result of CHF

Pulmonary embolism (PE)- a blood clot that breaks off from a large vein and travels to hr blood vessels of the lung, causing obstruction of blood flow

Pulse oximetry- an assessment tool that measures oxygen saturation of hemoglobin in the capillary beds

Residual volume- the air that remains in the lungs after maximal expiration

Respiration- the process of exchanging oxygen and carbon dioxide

Respiratory compromise- the inability of the body to move gas effectively

Respiratory system- all the structures of the body that contribute to the process of breathing, consisting of the upper and lower airway and their components parts

Rhonchi- coarse, low-pithed breath sounds heard in pt with chronic mucus in the upper airway

Severe airway obstruction- occurs when a foreign body completely obstructs the pt's airway. The pt cannot breathe, talk, or cough

Stridor- a harsh, high-pitched resp sound, generally heard during inspiration, that is caused by partial blockage or narrowing of the upper airway; may be audible without a stethoscope

Suction catheter- a hollow, cylindrical device used to remove fluid from the pt's airway

Tachypnea- rapid respiration

Tidal volume- the amount of air (in milliliters) that is moved into or out of the lungs during one breath

Tonsil tips- large, semi-rigid suction tips recommended for suctioning the pharynx

Tracheostomy- a surgical procedure to create an opening (stoma) into the trachea; a stoma in the neck connects the trachea directly to the skin

Tracheostomy tube- a plastic tube placed within the tracheostomy site (stoma)

Two- to three- word dyspnea- a severe breathing problem in which a pt can speak only two to three words at a time without pausing to take a breath

Ventilation- the exchange of air between the lungs and the environment; occurs spontaneously by the pt or with assistance from another person, such as an EMT

Vital capacity- the amount of air that can be forcibly expelled from the lungs after breathing in as deeply as possible

Wheezing- a high-pitched, whistling breath sounds that is moody prominent on expiration, and which suggests an obstruction or narrowing of the lower airway; occurs in asthma and bronchiolitis

Work of breathing- an indicator of oxygenation and ventilation; reflects the child's attempt to compensate for hypoxia

Wallenpaupack Area School District Curriculum	
COURSE: Protective Service II – Emergency Medical Technician	GRADE/S: 10-12
UNIT 5: Assessment	TIMEFRAME:

**PA COMMON CORE/NATIONAL STANDARDS: National Highway Traffic and Safety Administration (NHTSA) Education Standards 2021.
NHTSA National Standard Curriculum 2021.
NHTSA Scope of Practice Model 2021.**

UNIT OBJECTIVES (SWBATS): Applies scene information and patient assessment findings (scene size up, primary and secondary assessment, patient history and reassessment) to guide emergency management.

Scene Assessment

- Scene safety/situational awareness
- Scene management
- Impact of the environment on patient care
- Addressing hazards
- Violence
- Need for additional or specialized resources
- Standard precautions
- Multiple patient situations

Primary Assessment - (Include age-related variations in pediatric and geriatric patients)

- Primary assessment
- Integration of treatment/ procedures needed to preserve life

History Taking - (Include age-related variations in pediatric and geriatric patients)

- Investigation of the chief complaint
- Mechanism of injury/nature of illness
- Associated signs and symptoms
- Past medical history
- Pertinent negatives

Secondary Assessment - (Include age-related variations in pediatric and geriatric patients)

- Assessment of vital signs
- Assessment of pain
- Techniques of physical examination
- Respiratory system including breath sound quality
- Cardiovascular system
- Neurological system
- Musculoskeletal system
- Major anatomical regions

Monitoring Devices

- Pulse oximetry
- Non-invasive blood pressure
- Cardiac monitoring – 12 lead ECG acquisition and transmission
- Blood glucose determination

Reassessment - (Include age-related variations in pediatric and geriatric patients)

- How and when to reassess patients

INSTRUCTIONAL STRATEGIES/ACTIVITIES: Didactic instruction flowed by skills laboratory.

Didactic

- Lecture presentation
- Oral Discussion

Laboratory

- Skills Demonstration
- Equipment demonstration
 - Safety Review

Scenarios

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

Assessment in Action exercises

Interactive Lectures

Written (online) test

Written (online) quiz

Laboratory Reflection

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Laboratory Behavioral Affective Domain Evaluation

DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

RESOURCES (Technology Based Resources, Text Resources, etc.):

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Test Prep Simulator

KEY VOCABULARY:

Adduction- motion of a limb towards the midline

AVPU scale- a method of assessing the level of consciousness by determining whether the pt is awake and alert, responsiveness to verbal stimuli or pain, or unresponsive; used principally early in the assessment process

Blanch- to turn white

Blood pressure (BP)- the pressure that the blood exerts against the walls of the arteries as it passes through them

Breath sounds- an indication of air movement in the lungs, usually assessed with a stethoscope

Bronchial breath sounds- normal breath sounds made by air moving through the bronchi

Capillary - the small blood vessels that connect arterioles and venules; various substances pass through capillary walls, into and out of the interstitial fluid, and then on to the cells

Capillary refill- a test that evaluates distal circulatory system function by squeezing (blanching) blood from an area such as a nail bed and watching the speed of its return after releasing the pressure

Carotid artery- the major artery that supplies blood to the heart and brain

Cervical spine- the portion of the vertebral column consisting of the first seven vertebrae that lie in the neck

Chemoreceptors- monitor the levels of oxygen, carbon dioxide, and pH of the cerebrospinal fluid and then provide feedback to the respiratory centers to modify the rate and depth of breathing based on the body's needs at any given time

Cheyne-Stroke resp- a cyclical pattern of abnormal breathing that increases and then decreases in rate and depth, following by a period of apnea

Chief complaint- the reason a patient called for help; also, the patient's response to questions such as "what's wrong" or "what happened"

Chief concern- the condition requiring the most urgent interventions as determined by the providers assessment of the pt; it is not always the same as the chief complaint

Contraindications- conditions that make a particular medication n or treatment inappropriate because it would not help, or may harm, a pt

Conventional reasoning- a type of reasoning in which a child looks for approval from peers and society

Cross- contamination- occurs when a person is contaminated by an agent due to coming in contact with another contaminated person

Cultural imposition- when one person imposes his or her beliefs, values, and practices on another because he or she believes his or her ideals are superior

Decision-making capacity- ability to understand and process info and make a choice regarding appropriate epically care

Deep- farther inside the body away from the skin

Dependent edema- swelling in the part of the body closest to the ground, c a used by collection of fluid in the tissue; a possible sign for CHF

Dependent lividity- blood settling to the lowest pointy box the body, causing discoloration of the skin; a definitive sign of death

Dermis- the inner layer of the skin, containing hair follicles, sweat glands, nerve endings and blood vessels

Diaphoretic- characterized by light or profuse. Sweating

Diastolic pressure- the pressure that remains in the arteries during the relaxing phase of the heart's cycle (**diastole**) when the left ventricle is at rest

Dilation- widening of a tubular structure such as a coronary artery

Distal- farther from the trunk or nearer to the free end of the extremity

Distress- a negative response to a stressor

Dorsal- the posterior surface of the body, including the back of the hand

Dorsalis pedis artery- the artery on the anterior surface of the foot between the first and second metatarsals.

Ecchymosis- a buildup of blood beneath the skin that produces a characteristic blue or black discoloration as the result of a injury

Femoral artery- the major artery to the thigh, a continuation of the external iliac artery. It supplies blood to the lower abdominal wall, and lower extremities.

Flank- the region below the rib cage and above the hip

Focused assessment- a type of physical assessment typically performed on pts who have sustained nonsignificant mechanisms of injury or on responsive medical pts. This type of exam is based on the chief complaint and focuses on one body system or part

Gastric distention- a condition in which air fills the stomach, often as a result of high volume and pressure during artificial ventilation

Golden hour- the time for injury to definitive care, during which treatment of shock and traumatic injuries should occur because survival potential is best; also called the golden period

Grunting- an “uh” sound during exhalation; reflects the child’s attempt to keep the alveoli open; a sign of increased work of breathing

Guarding-involuntary muscles contracting (spasm) of the abdominal wall to minimize the pain of the abdominal movement; a sign of peritonitis

Hallucinogen- an agent that produces false perceptions in any one of the five senses

Heart rate (HR)- the number of heartbeats during a specific time (usually 1 minute)

Hematoma- a mass of blood that has collected within damaged tissue beneath the skin or in a body cavity

Hemiparesis- weakness on one side of the body

Hemoptysis- the coughing up of blood

Hemorrhage- bleeding

Hernia- the protrusion of an organ or tissue through an abnormal body opening

Hypertension- BP that is higher than the normal range

Hypertensive emergency- an emergency created by excessively high BP, which can lead to serious complications such as stroke or aneurysm

Hyperthermia- a condition in which the body core temp rises to 101 degrees F (38.3 degrees C) or more

Hypoglycemia- an abnormally low blood glucose level

Hypoperfusion- a condition in which the circulatory system fails to provide sufficient circulation to maintain normal cellular function; also called shock

Hypotension- blood pressure that is lower than the normal range

Hypothermia- a condition in which the internal body temp falls below 95 degrees (35 degrees C)

Infarction- the abnormal invasion of a host or host tissues by organisms such as bacteria, viruses, or parasites, with or without signs or symptoms of disease

Insulin- a hormone produced by the islets of Langerhans (endocrine glands located throughout the pancreas) that enables glucose in the blood to enter cells; used in synthetic form to treat and control diabetes mellitus

Interstitial Space- the space between the cells

Intracellular space-the space within a cell or cells

Ischium- one of the three bones that fuse to form the pelvic ring

Jaundice- yellow skin or sclera that is caused by liver disease or dysfunction

Jugular vein distention (JVD)- a visual bulging of the jugular veins in the neck that can be caused by fluid overload, pressure in the chest, cardiac tamponade, or tension pneumothorax

Kussmaul respirations- deep, rapid breathing; usually the result of an accumulation of certain acids when insulin is not available in the body

Kyphosis- a forward curving of the back caused by an abnormal increase in the curvature of the spine

Labored breathing- the use of muscles of the chest, back and abdomen to assist in expanding the chest; occurs when air movement is impaired

Lateral- parts of the body that lie farther from the midline; also called outer structure

Laterals plane- an imaginary line where the body is divided into left and right parts

Nasal flaring- widening of the nostrils, indicating there is an airway obstruction

Palpate- to examine by touch

Pertinent negative (PN) - negative findings that warrant no care or interventions

Point tenderness- tenderness that is hardly localized at the site of the injury, found by gently palpating along the bone with the tip of one finger

Primary assessment- a step. Within the pt assessment process that identifies and initiates treatment of immediate and potential life threats

Quadrants- the sections of the abdominal cavity, in which two imaginary lines intersect at the umbilical, dividing the abdomen into four equal areas

Radial artery- the major artery in the forearm; it is palpable at the wrist on the thumb side

Reassessment- a step within the pt assessment process performed at regular intervals during the assessment process to identify and treat changes in a pt's condition. Pt in unstable condition should be reassessed every 5 min, whereas a pt in stable condition should be reassessed every 15 min

Recovery position- a side-lying position used to maintain a clear airway in unresponsive pt who are breathing adequately and do not have suspected injuries to the spine, hip or pelvis

Responsiveness- the way in which a pt responds to external stimuli, including verbal stimuli (sound). Tactile stimuli (touch) and painful stimuli

Retractions- movement in which the skin pulls in around the ribs during inspiration

Rigor mortis- stiffening of the body muscles; a definitive sign of death

Rule of nines- a system that assigns percentages to sections of the body, allowing calculation of the amount of skin surface involved in the burn area

SAMPLE history- a brief history of a pt's condition to determine signs and symptoms, allergies, medications, pertinent past history, last oral intake, and events leading to the injury or illness

Scene size-up- a step within the pt assessment process that involves a quick assessment of the scene and the surrounding to provide info about scene safety and the MOI or NOI beforehand you enter and begin pt care

Secondary assessment- a step within the pt assessment process in which a systematic physical exam of the pt is performed. The exam may be a systematic exam or an assessment that focuses on a certain area or region of the body, often determined through the chief complaint

Semen- fluid ejaculated from the penis and containing sperm

Seminal vesicles- storage sacs for sperm and prostatic fluid, which empty into the urethra at the prostate

Shallow respirations- resp characterized by little movements of the chest wall (reduced tidal volume) or poor chest excursion

Sign- objective finding that can be seen, heard, felt, smelled or measured

Somatic nervous system- the part of the nervous system that regulates activities over which there is voluntary control

Sphincters- muscles that encircle and, by contracting, constrict and duct, tube, or opening (ex. Are found within the rectum, bladder, and blood vessels)

Sterilization- a process, such as heating, that removes microbial contamination

Stoma- an opening through the skin and into an organ or other structure

Strain- stretching or tearing of a muscle; also called a muscle pull

Subcutaneous tissue- tissue, largely fat, that lies directly under the dermis and serves as an insulator of the body

Symptom- subjective findings that the pt feels but that can be identified only by the pt
ternal genitalia, and legs. It can be palpated in the groin area

Transverse plane- an imaginary line where the body is divided into top and bottom parts

Tripod position- an upright position in which the pt leans forward with two arms stretched forward and thrusts the head and chin forward

Ureter- a small, hollow tube that carries urine from the kidneys to the bladder

Urethra- the canal that conveys urine from the bladder to outside the body

Urinary bladder- a sac behind the pubic symphysis made of smooth muscle that collects and stores urine

Urinary system- the organs that control the discharges waste materials filtered from the blood and excreted as urine

Vesicular breath sounds- normal breath sounds made by air moving in and out of the alveoli

Visceral pleura- thin membrane that covers the lungs

Voluntary activities- actions that we consciously perform, in which sensory input or conscious thought determines a specific muscular activity

Voluntary muscle- muscle that is under direct voluntary control of the brain and can be contracted or relaxed at will; skeletal, or striated, muscle

Wheal- a raised, swollen, well-defined area on the skin resulting from an insect bite or allergic reaction

Wallenpaupack Area School District Curriculum	
COURSE: Protective Service II – Emergency Medical Technician	GRADE/S: 10-12
UNIT 6: Medicine	TIMEFRAME:

**PA COMMON CORE/NATIONAL STANDARDS: National Highway Traffic and Safety Administration (NHTSA) Education Standards 2021.
NHTSA National Standard Curriculum 2021.
NHTSA Scope of Practice Model 2021.**

UNIT OBJECTIVES (SWBATS): Applies knowledge of the EMS System, Safety/Well-being of the EMT, Workforce Safety & Wellness, Research, Documentation, EMS System Communication, Therapeutic Communication, Medical/Legal and Ethical Issues, Anatomy & Physiology, Medical Terminology, Pathophysiology and Life Span Development to the provision of emergency care.

Medical Overview -(Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients).

- Pathophysiology, assessment, and management of a medical complaints to include
 - Transport mode
 - Destination decisions

Abdominal and Gastrointestinal Disorders - (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients).

- Acute and chronic gastrointestinal hemorrhage
- Other gastrointestinal disorders to be determined locally

Cardiovascular - (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients).

- Acute coronary syndrome
- Hypertensive emergencies
- Aortic aneurysm/dissection
- Thromboembolism
- Heart failure
- Other cardiovascular disorders to be determined locally

Disorders of the Eyes, Ears, Nose, and Throat - (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients).

- Epistaxis
- Other eye, ear, nose and throat disorders to be determined locally

Endocrine Disorders - (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients).

- Diabetic emergencies
- Other endocrine disorders to be determined locally

Genitourinary/Renal - (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients).

- Complications related to renal dialysis
- Complications related to urinary catheter management (not insertion)
- Kidney stones
- Sexual assault (Female and Male)
- Other GI/Renal to be determined locally

Hematology - (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients).

- Sickle cell crisis
- Clotting disorders
- Other hematologic disorders to be determined locally

Immunology - (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients).

- Allergic and anaphylactic reactions
- Other immunological disorders to be determined locally

Infectious Diseases - (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients).

- Assessment and management of a patient who may have an infectious disease
- How to decontaminate the ambulance and equipment after treating a patient
- Sepsis and septic shock
- Other infectious diseases to be determined locally

Neurology - (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients).

- Decreased level of responsiveness
- Seizure
- Stroke
- Dementia vs. delirium
- Alzheimer's disease
- Headache
- Brief Resolved Unexplained Event (BRUE)
- Other neurological disorders to be determined locally

Non-Traumatic Musculoskeletal Disorders - (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients).

- Non-traumatic fractures
- Other non-traumatic musculoskeletal disorders to be determined locally

Psychiatric or Behavioral Emergencies - (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients).

- Basic principles of the mental health system
- Patterns of violence, abuse and neglect
- Acute psychosis
- Suicide ideation
- Excited delirium
- Anxiety
- Depression
- Medical fear
- Substance use disorder
- PTSD
- Other psychiatric/behavioral disorders to be determined locally

Respiratory - (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients).

- Respiratory distress/failure/ arrest
- Upper airway obstruction
- Lower airway disease: Asthma, bronchiolitis, pneumonia, chronic obstructive pulmonary disease (COPD)
- Spontaneous pneumothorax
- Pulmonary edema
- Other respiratory disorders to be determined locally

Toxicology - (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients).

- Carbon monoxide poisoning
- Nerve agent poisoning
- Opioid toxicity
- How and when to contact a poison control center
- Poisons (inhaled, ingested, injected, absorbed)
- Alcohol intoxication and withdrawal
- Other toxicological disorders to be determined locally

INSTRUCTIONAL STRATEGIES/ACTIVITIES: Didactic instruction flowed by skills laboratory.

Didactic

- Lecture presentation
- Oral Discussion

Laboratory

- Skills Demonstration
- Equipment demonstration
 - Safety Review

Scenarios

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

Assessment in Action exercises

Interactive Lectures

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Cornell Notes

Classroom Behavioral Affective Domain Evaluation

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DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

RESOURCES (Technology Based Resources, Text Resources, etc.):

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Test Prep Simulator

KEY VOCABULARY:

Abdominal Aortic Aneurysm (AAA)- A rapidly fatal condition in which the walls of the aorta in the abdomen weakened and blood leaks into the layers of the vessel, causing it to bulge

Abdominal thrust maneuver- The preferred method of dislodging a server airway obstruction in adults and children; also called the Heimlich maneuver

Abruptio Placentae- premature separation of the placenta from the wall of the uterus

Active compression- decompression CPR- a technique that involves compression the chest and then actively pulling it back up to its neutral position or beyond (decompression); may increase the amount of blood that returns to the heart and, thus, the amount of blood ejected from the heart during the compression phase.

Acute abdomen- A condition of sudden onset of pain within the abdomen, usually indicating peritonitis; immediate medical or surgical treatment is necessary

Acute Coronary Syndrome (ACS)- A group of symptoms caused by myocardial ischemia; includes angina and myocardial infarction

Acute myocardial infarction (MI)- A heart attack; death of heart muscle following obstruction of blood flow to it. "Acute" in this context means "new" or "happening right now"

Acute Seizure Disorder- a group of complex disorders of brain development, characterized by difficulties in social interaction, repetitive behaviors, and verbal and nonverbal communication

Acute stress infarction- Reactions to stress that occur during a stressful situation

Aerosol-generating procedure- any airway manipulation that induces the production of aerosol that may present at risk for airborne transmission of pathogens, such as CPR

Afterload- the force of resistance against which the heart pumps

Agonist- a medication that causes stimulation of receptors

Air embolism- the presence of air in the veins, which can lead to cardiac arrest if it enters the heart

Airborne transmission- the spread of an organism via droplets or dust

Allergen- a substance that causes an allergic reaction

Alpha radiation- a type of energy that is emitted from a strong radiologic source; it is the least harmful penetrating type of radiation and cannot travel more than a few inches or penetrate most objects

Alpha- adrenergic receptors- portions of the nervous system that, when stimulated, can cause constriction of blood vessels

Altered mental status- changes in the way a person thinks and behaves that may signal disease in the central nervous system or elsewhere in the body

Amniotic sac- the fluid-filled, bag like membrane in which the fetus develops

Amputation- an injury in which part of the body is completely severed

Anaphylactic shock- an extreme, life-threatening, systemic allergic reaction that may include shock and respiratory failure

Anemic- describes a condition in which the pt has too few red blood cells, resulting in a decreased ability to transport oxygen throughout the body via the bloodstream

Angina pectoris- transient (short-lived) chest discomfort caused by partial or temporary blockage of blood flow to the heart muscle, also called angina

Anterograde amnesia- inability to remember events after an injury

Anthrax- a disease caused by a deadly bacterium (*Bacillus anthracis*) that lies dormant in a spore (protective shell); the germ is released from the spore when exposed to the optimal temp. and moisture. The routes of entry are inhalation, cutaneous, and gastrointestinal (from consuming food that contains spores)

Apgar score- a scoring system for assessing the status of a newborn that assigns a number value to each of five areas

Aphasia- the inability to understand and/ or produce speech

Apnea- absence of spontaneous breathing

Apneic oxygenation- a technique in which oxygen administered via a high-flow nasal cannula is left in place during an intubation attempt, allowing for continuous oxygen delivery into the airways during all phases of the procedure

Apparent life-threatening event (ALTE)- an event that causes unresponsiveness, cyanosis, and apnea in an infant, who then resume breathing with stimulation

Appendicitis- inflammation or infection of the appendix

Arterial air embolism- air bubbles in the arterial blood vessels

Artifact- tracing on an ECG that is the result of interference, such as pt movement, rather than the heart's electrical activity

Ascites- an abnormal accumulation of excess fluid in the peritoneal cavity

Asystole- the complete absence of all heart electrical activity

Aura- a sensation experience before a seizure; serves as a warning sign that a seizure is about to occur

Bile ducts- the ducts that convey bile between the liver and the intestine

Brachial artery- the major vessel in the upper extremities that supplies blood to the arm

Bradycardia- a slow heart rate, Leeds's than 60 beats/min

Bradypnea- slow resp rate; an ominous sign in a child that indicates impending resp arrest

Brain stem- the area of the brain between the spinal cord and cerebrum, surrounded by the cerebellum; controls functions that are necessary for life, such as resp

Brain- the controlling organ of the body and center of consciousness; function include perception, control of reactions to the environment, emotional responses and judgment

Calcaneus- the heel bone

Capillary vessels- the tiny blood vessels between the arterioles and venues that permit transfer of oxygen, carbon dioxide, nutrients, and waste between body tissues and the blood

Cardiac arrest- when the heart fails to generate effective and detectable blood flow; are not palpable in cardiac arrest, even if muscular and electrical activity continues in the heart

Cardiac muscle- the heart muscle

Cardiac output- a measure of the volume of blood circulated by the heart in 1 minute, calculated by multiplying the stroke volume by the heart rate

Cardiac tamponade- compression of the heart as the result of buildup of blood or other fluid in the pericardial sac, leading to decreased cardiac output

Cardiogenic shock- a state in which not enough oxygen is delivered to the tissues of the body, caused by low output of blood from the heart. It can be a severe complication of a large acute MI, as well as other conditions

Cardiopulmonary resuscitation (CPR)- the combination of chest compressions and rescue breaths used to establish adequate ventilation and circulation in a pt who is not breathing and has no pulse

Carina- point at which the trachea bifurcates (divides) into the left and right main stem bronchi

Carotid artery- the major artery that supplies blood to the heart and brain

Carpals- small bones that compose the wrist

Cartilage- the smooth connective tissues that form the support structure of the skeletal system and provides cushioning between bones; forms the nasal septum and portions of the outer ear

Cataracts- clouding of the lens of the eye or its surrounding transparent membranes

Cecum- the first part of the large intestine, into the ileum opens

Cellular metabolism- a set of chemical reactions that supplies cells with energy. Includes both anaerobic and aerobic metabolism

Central nervous system (CNS)- the brain and spinal cord

Central pulses- pulses that are closest to the core (central) part of the body where the vital organs are located; include the carotid, femoral and apical pulses

Cerebellum- one of the three major subdivisions of the brain, sometimes called little brain, coordinates the various activities of the brain, particularly fine body movements

Cerebral edema- swelling of the brain

Cerebrospinal fluid (CSF)- fluid produced in the ventricles of the brain that flows in the subarachnoid space and bathes the meninges

Cerebrovascular accident (CVA) also (Stroke)- an interruption of blood flow to the brain that results in the loss of brain function; also known as a stroke

Cerebrum- the largest part of the three subdivisions of the brain, sometimes called gray matter; made up of several lobes that controls movement, hearing, balance, speech, visual perception, emotions, and personality

Cervical spine- the portion of the vertebral column consisting of the first seven vertebrae that lie in the neck

Chemoreceptors- monitor the levels of oxygen, carbon dioxide, and pH of the cerebrospinal fluid and then provide feedback to the resp centers to modify the rate and depth for breathing based on the body's needs at any given time

Chief complaint- the reason a pt called for help; also, the pt response to questions such as “what’s wrong” or “what happened”

Chief concern- the condition requiring the most urgent interventions as determined by the providers assessment of the pt; it is not always the same as the chief complaint

Cholecystitis- inflammation of the gallbladder

Chordae tendineae- thin bands of fibrous tissue that attach to the valves in the heart and prevent them from inverting

Chronic bronchitis- irritation of the major lung passageways from long-term exposure to infection disease or irritants such as smoke

Chronic obstructive pulmonary disease (COPD)- a lung disease characterized by chronic obstruction of lung airflow that interferes with normal breathing and is not fully reversible

Chyme- the substance that leaves the stomach. It is a combination of all of the eaten food with added stomach acids

Circulatory system- the complex arrangement of connected tubes, including the arterioles, capillaries, venules, and veins, that moves blood, oxygen, nutrients, carbon dioxide, and cellular waste throughout the body

Clavicle- the collarbone; lateral to the sternum and anterior to the scapula

Coagulation- the formation of clots to plug open in injured blood vessels and stop blood flow

Colostomy- a surgical procedure to create an opening (stoma) between the colon and the surface of the body

Coma- a state of profound unconsciousness from which the pt cannot be roused

Compartment syndrome- swelling in a confined space that produces dangerous pressure; may cut off blood flow or damage sensitive tissue

Congestive heart failure (CHF)- a disorder in which the heart loses part of its ability to effectively pump blood, usually because of damage to the heart muscle and usually resulting in a backup of fluid into the lung

Conjunctiva- the delicate membrane that lines the eyelid and covers the exposed surface of the eye

Conjunctivitis- inflammation of the conjunctiva

Contraindications- conditions that make a particular medication n or treatment inappropriate because it would not help, or may harm, a pt

Cornea- transparent tissue layer in front of the pupil and iris of the eye

Coronary arteries- blood vessels that carry blood and nutrients to the heart muscle

Cranium- the part of the skull that encloses the brain and is composed of eight bones

Cricoid cartilage- a firm of cartilage that forms the lower part of the larynx

Cricothyroid membrane- a thin sheet of fascia that connects the thyroid and cricoid cartilage that make up the larynx

Croup- a viral inflammatory disease of the upper resp system that may cause a partial airway obstruction and is characterized by a barking cough; usually seen in children

Cyanosis- a blue skin discoloration that is caused by a reduced level of oxygen in the blood. Although paleness, or a decrease in blood flow, can be difficult to detect in dark-skinned people, it may be observed by examining mucous membranes inside the inner lower eyelid and capillary refill. Or general observation, the pt may appear ashen or gray

Cystitis- inflammation of the bladder

Decubitus ulcers- sores caused by the pressure of skin against a surface for long periods; can range from a discoloration of the skin to a deep wound that may invade into bone or organs; also known as bedsores

Deep venous thrombosis (DVT)- the formation of a blood clot within the larger veins of an extremity, typically following a long period of prolonged immobilization

Dehydration- loss of water from the tissue of the body

Delirium- a temporary change in mental status characterized by disorganized thoughts, inattention, memory loss, disorientation, striking changes in personality and affect, hallucinations, delusions, or a decreased level of consciousness

Delirium tremens (DT's)- a severe withdrawal syndrome seen in alcoholics who are deprived of ethyl alcohol; characterized by restlessness, fever, sweating, disorientation, agitation, and seizures; can be fatal if untreated

Dementia- the slow onset of progressive disorientation, shortened attention span, and loss of cognitive function; this condition is generally chronic and irreversible

Dependent edema- swelling in the part of the body closest to the ground, caused by collection of fluid in the tissue; a possible sign for CHF

Dependent lividity- blood settling to the lowest point of the body, causing discoloration of the skin; a definitive sign of death

Depression – a persistent mood of sadness, despair and discouragement; may be a symptom of many different mental and physical disorders, or may be a disorder on its own

Diabetes mellitus- a metabolic disorder in which the ability to metabolize carbohydrates (sugars) is impaired, usually because of a lack of insulin

Diabetic Ketoacidosis (DKA)- a form of hyperglycemia is uncontrolled diabetes in which certain accumulate when insulin is not available

Digestion- the processing of food that nourishes the individual cells of the body

Diphtheria- an infectious disease in which a pseudo-membrane forms, lining the pharynx; this lining can severely obstruct the passage of air into the larynx

Dissecting aneurysm- a condition in which the inner layers of an artery, such as the aorta, become separated, allowing blood (at high pressures) to flow between the layers

Diverticulitis- inflammation in small pockets at weak areas in the muscle walls of the intestines

Down syndrome- a genetic chromosomal defect that can occur during fetal development and that results in intellectual impairment as well as certain physical characteristics, such as a round head with a flat occiput and slanted, wide-set eyes

Dysarthria- slurred speech

Dysrhythmia- an irregular or abnormal heart rhythm

Ecchymosis- a buildup of blood beneath the skin that produces a characteristic blue or black discoloration as the result of an injury

Edema- the presence of abnormally large amounts of fluid between cells in body tissues, causing swelling of the affected area

Embolus- a blood clot or other substance in the circulatory system that travels to a blood vessel where it causes a blockage of blood flow

Emesis- vomiting

Emphysema- a disease of the lungs in which there is external dilation and eventual destruction of the pulmonary alveoli with poor exchange of oxygen and carbon dioxide; it's one form of chronic obstructive pulmonary disease

Endocrine glands- glands that secrete or release chemicals that are used inside the body

Endocrine system- the complex message and control system that integrates many body functions, including the release of hormones

Enzymes- substances designed to speed up the rate of specific biochemical reactions

Epidural hematoma- an accumulation of blood between the skull and the dura mater

Epiglottitis- a bacterial infection in which the epiglottis becomes inflamed and enlarged and may cause an upper airway obstruction

Epilepsy- a disorder in which abnormal electrical discharges occur in the brain, causing seizures and possible loss of consciousness; a medication that increases heart rate and BP but also eases breathing problems by decreasing the muscle tone of the bronchiole tree

Epistaxis- a nose bleed

Esophagus- a collapsible tube that extends from the pharynx to the stomach; muscle contractions propel food and liquids through it to the stomach

Eustachian tube- a tube that connects the middle ear to the oropharynx

Evidence-based medicine- an approach to medicine where decisions are based on well-conducted research, classifying recommendations based on the strengths of the scientific evidence; also known as science-based medicine

Excited delirium- a serious behavioral condition in which a person exhibits agitated behavior combined with disorientation, hallucinations, or delusions; also called agitated delirium or exhaustive mania

Extension- a straightening of a joint

External auditory canal- the ear canal; to the tympanic membrane

Fascia- a fiber-like connective tissue that covers arteries, veins, tendons, and ligaments

Febrile seizures- seizures that result from sudden fevers; mostly seen in children

Femoral artery- the major artery to the thigh, a continuation of the external iliac artery. It supplies blood to the lower abdominal wall, external genitalia, and legs. It can be palpated in the groin area

Femoral head- the proximal end of the femur, articulating with the acetabulum to form the hip joint

Femur- the thighbone; the longest and one of the strongest bones in the body

Fibula- the smaller of the two bones that form the lower leg, located on the lateral side

Flank- the region below the rib cage and above the hip

Flexion- the bending of a joint

Focal seizure- a seizure affecting a limited portion of the brain

Focused assessment- a type of physical assessment typically performed on pts who have sustained nonsignificant mechanisms of injury or on responsive medical pts. This type of exam is based on the chief complaint and focuses on one body system or part

Foramen magnum- a large opening at the base of the skull through which the brain connects to the spinal cord

Fowler position- an inclined position in which the head if the bed is raised

Fracture- a break in the continuity of a bone

Frontal bones- the bones of the cranium that form the forehead

Frontal plane- an imaginary plane where the body is divided into front and back parts

Femoral artery- the major artery to the thigh, a continuation of the external iliac artery. It supplies blood to the lower abdominal wall, external genitalia, and legs. It's can be palpated in the groin area

Gastroesophageal reflux disease (GERD)- a condition in which the sphincter between the esophagus and stomach opens, allowing stomach acid to move up into the esophagus, usually resulting in a burning sensation within the chest; also called acid reflux

Generalized seizure- a seizure characterized by severe twitching of all of the body's muscles that may last several minutes or more; formerly known as a grand mal seizure

Genital system- the reproductive system in men and women

Germinal layer- the deepest layer of the epidermis, where new skin cells are formed

Hair follicles- the small organs that produce hair

Hay fever- an allergic response, usually to outdoor airborne allergens such as pollen or sometimes indoor allergens such as dust mites or pet dander; also called allergic rhinitis

Heart- a hollow muscular organ that pumps blood throughout the body

Heart rate (HR)- the number of heartbeats during a specific time (usually 1 minute)

Heat cramps- painful muscle spasms usually associated with vigorous activity in a hot environment

Hematemesis- vomiting blood

Hematology- the study and prevention of blood-related disorders

Hematuria- blood in the urine

Hemoglobin- an oxygen-carrying protein found in red blood cells

Hemorrhagic stroke- a type of stroke that occurs because of bleeding inside the brain

Hepatitis- inflammation of the liver, usually caused by a viral infection, that causes fever, loss of appetite, jaundice, fatigue, and altered liver function

Herpes simplex- a common virus that is asymptomatic in 80% of people carrying it, but characterized by small blisters on the lips or genitals in symptomatic infections

Homeostasis- a balance of all systems of the body

Human immunodeficiency virus (HIV)- acquired immunodeficiency syndrome (AIDS) is caused by HIV, which damages the cells in the immune system so that the body is unable to fight infection or certain cancers

Hyperglycemia- an abnormally high blood glucose level

Hyperosmolar hyperglycemia nonketotic syndrome (HHNS)- a life-threatening condition resulting from high blood glucose that typically occurs in older adults, and which causes altered mental status, dehydration and organ damage

Hypertension- BP that is higher than the normal range

Hypertensive emergency- an emergency created by excessively high BP, which can lead to serious complications such as stroke or aneurysm

Hyperthermia- a condition in which the body core temp rises to 101 degrees F (38.3 degrees C) or more

Hypoglycemia- an abnormally low blood glucose level

Hypoperfusion- a condition in which the circulatory system fails to provide sufficient circulation to maintain normal cellular function; also called shock

Hypotension- blood pressure that is lower than the normal range

Hypothermia- a condition in which the internal body temperature falls below 95 degrees (35 degrees C)

Hypovolemic shock- a condition in which low blood volume, due to massive internal or external bleeding or extensive loss of body water, results in inadequate perfusion

Ileostomy- a surgical procedure to create an opening (stoma) between the small intestine and the surface of the body

Ileus- paralysis of the bowel, arising from any one of several causes; stops contractions that move material through the intestine

Ilium- one of three bones that fuse to form the pelvic ring

Immune response- the body system that includes all of the structures and processes designed to mount a defense against foreign substances and disease-causing agents

Immune response- the body's response to a substance perceived by the body as foreign

Immune- the body's ability to protect itself from acquiring a disease

Immunology- the study of the body's immune system

Incontinence- loss of bowel and/or bladder control; may be the result of a

Inferior vena cava- one of the two larger veins in the body; carries blood from the lower extremities and the pelvis and the abdominal organs to the heart

Involuntary activities- actions of the body that are not under a person's conscious control

Involuntary muscle- the muscle over which a person has no conscious control. It is found in many automatic regulating systems of the body

Iris- the muscle and surrounding tissue behind the cornea that dilates and constricts the pupil, regulating the amount of light that enters the eye; pigment in the tissue gives the eye its color

Ischemia- a lack of oxygen that deprives tissues of necessary nutrients, resulting from partial or complete blockage of blood flows; potentially reversible because permanent injury has not yet occurred

Ischemic stroke- a type of stroke that occurs when blood flow to a particular part of the brain is cut off by a blockage (Ex. A blood clot) inside a blood vessel

Kidney stones- solid crystalline masses formed in the kidney, resulting from an excess of insoluble salts or uric acid crystallizing in the urine; may become trapped anywhere along the urinary tract

Kidneys- two retroperitoneal organs that excrete the end products of metabolism as urine and regulate the body's salt and water content

Kussmaul respirations- deep, rapid breathing; usually the result of an accumulation of certain acids when insulin is not available in the body

Methicillin-resistant Staphylococcus aureus (MRSA) - a bacterium that can cause infection in different parts of the body and is often resistant to commonly used antibiotics; it is transmitted by different routes, including the resp route, and can be found on the skin, in surgical wounds, and in the bloodstream, lungs and urinary tract

Miosis- excessively constricted pupil; often bilateral after exposure to nerve agents

Musculoskeletal system- the bones and voluntary muscles of the body

Mutagen- a substance that mutates, damages, and changes the structure of DNA in the body's cells

Myocardial contractility- the ability of the heart muscle to contract

Myocardial contusion- bruising of the heart muscle

Myocardium- the heart muscle

Neuropathy- a group of conditions in which the nerves leaving the spinal cord are damaged, resulting in distortion of signals from the brain

Obesity- a complex condition in which a person has an excessive amount of body fat

Occlusion- a blockage, usually of a tubular structure such as a blood vessel

Organic brain syndrome (OBS)- temporary or permanent dysfunction of the brain, caused by a disturbance in the physical or physiological functioning of brain tissue

Orthopnea- severe dyspnea experienced when lying down and relieved by sitting up

Osteoporosis- a generalized bone disease, commonly associated with postmenopausal women, but that can occur in either sex, in which there is a reduction in the amount of bone mass, leading to fractures after minimal trauma

Pancreatitis- inflammation of the pancreas

Peptic ulcer disease- an abrasion of the stomach or small intestine

Pericardial effusion- a collection of fluid between the pericardial sac and the myocardium

Peritonitis- inflammation of the peritoneum

Pleural effusion- a collection of fluid between the lung and chest wall that may compress the lung

Pleuritic chest pain- sharp, stabbing pain in the chest that is worsened by a deep breath or other chest wall movement; often caused by inflammation or irritation of the pleura

Pneumonia- an infectious disease of the lung that damages lung tissues

Pneumonic plague- as lung infection, also known as plague pneumonia, that is the result of inhalation of plague-causing bacteria

Polydipsia- excessive thirst that persists for long periods despite reasonable fluid intake, often the result of excessive urination

Polyphagia- excessive eating; in diabetes, the inability to use glucose properly can cause a sense of hunger

Polyuria- the passage of an unusually large volume of urine in a given period; in diabetes, this can result from the wasting of glucose in the urine

Postictal state- the period following a seizure that lasts 5 to 30 min; characterized by labored resp and some degree of altered mental status

Preload- the precontraction pressure in the heart as the volume of blood builds up

Psychiatric disorder- an illness with psychological or behavioral symptoms and/or impairment in functioning caused by a social, psychological, genetic, physical, chemical, or biological disturbance

Psychosis- a mental disorder characterized by the loss of contact with reality

Pulse pressure- the difference between the systolic and diastolic pressures

Pulse- the wave of pressure created as the heart contracts and forces blood out of the left ventricle and into the major arteries

Putrefaction- decomposition of body tissues; a definitive sign of death

Rabid- infected with rabies

Respiratory syncytial virus (RSV) - a virus that causes infection of the lungs and breathing passages; can lead to other serious illnesses that affect the lungs or heart, such as bronchiolitis and pneumonia. RSV is highly contagious and spread through droplets

Schizophrenia- a complex, difficult-to- id mental disorder whose onset typically occurs during early adulthood. Symptoms typical become more prominent over time as fed includes delusions, hallucinations, a lack of interest in pleasure, and erratic speech

Seizure- a neurological episode caused by a surge of electrical activity in the brain; can be a convulsion characterized by generalized, uncoordinated muscular activity, and can be associated with loss of consciousness

Sensitization- developing a sensitivity to a substance that initially caused no allergic reaction

Status epilepticus- a condition in which seizures recur every few minutes or last longer than 30c minutes

Strangulation- complete obstruction of blood circulation in each organ as a result of compression or entrapment; an emergency causing death of tissue

Stroke- an interruption of blood flow to the brain that results in the loss of brain functions; also called a cerebrovascular accident (CVA)

Stroke volume- the volume of blood pumped forward with each ventricular contraction

Substance abuse- the misuse of any substance to produce a desired effect

Symptomatic hyperglycemia- a state of unconsciousness resulting from several problems, including ketoacidosis, dehydration because of excessive urination, and hyperglycemia

Symptomatic hypoglycemia- severe hypoglycemia resulting in changes in mental status

Syncope- a fainting spell or transient loss of consciousness

Synovial fluid- the small amount of liquid within a joint used as lubrication

Synovial membrane- the lining of a joint that secretes synovial fluid into the joint space

Telemetry- a process in which electronic signals are converted into coded, audible signals; these signals can then be transmitted by radio or telephone to a receiver with a decoder at the hospital

Thromboembolism- a blood clot that has formed within a blood vessel and is floating within the blood stream

Thrombophilia- a tendency towards the development of blood clots because of an abnormality of the system of coagulation

Thrombosis- a blood clot, either in the arterial or venous system. When the clot occurs in a cerebral artery, it may result in the interruption of cerebral blood flow and subsequent stroke

Tonic-clonic seizure- a seizure characterized by severe twitching of all the body's muscles that may last several minutes or more; formerly known as a grand mal seizure

Tracheitis- inflammation of the trachea

Transient ischemia attack (TIA)- a disorder of the brain in which brain cells temporarily stop functioning because of insufficient oxygen, causing stroke like symptoms that resolve completely within 24 hours of onset

Transmission- the way in which infectious diseases spread; contact, airborne, by vehicles or by vectors

Tuberculosis (TB)- a chronic bacterial disease, caused by *Mycobacterium tuberculosis*, that usually affects the lungs but can also affect other organs such as the brain and kidneys; it is spread by cough and can lie dormant in a person's lungs for decades and then reactivate

Type 1 diabetes (IDDM)- an autoimmune disorder in which the individual's immune system produces antibodies to the pancreatic beta cells, and therefore the pancreas cannot produce insulin; onset in early childhood is common

Type 2 diabetes (NIDDM)- A condition in which insulin resistance develops in response to increased blood glucose levels; can be managed by exercise and diet modification, but is often managed by medication

Uremia- severe kidney failure resulting in the buildup of waste products within the blood, eventually brain functions will be impaired

Urinary tract infection (UTI)- an infection, usually of the lower urinary tract (urethra and bladder), that occurs when normal flora bacteria enter the urethra and grows

Urostomy- a surgical procedure to create an opening (stoma) that connects the urinary system to the surface of the skin and allows urine to drain through the abdominal wall

Urticaria- small areas of generalized itching and/or burning that appear as multiple raised area on the skin, hives

Vancomycin-Resistant Enterococci (VRE)- bacteria that are normally present in the human intestines and the female reproductive tract, but which can cause infection, and which are resistant to the vancomycin

Vaso-occlusive crisis- ischemia and pain caused by sickle-shaped red blood cells that obstruct blood flow to a portion of the body

Vector-borne transmission- the use of an animal to spread an organism from one person or place to another

Ventricular tachycardia- a rapid heart rhythm in which the electrical impulse begins in the ventricle (instead of the atria), which may result in inadequate blood flow and eventually deteriorate into cardiac arrest

Viral hemorrhagic fevers- a group of diseases caused by viruses that include the Ebola, Rift Valley, and Yellow Fever Viruses, among others. This group of viruses causes the blood in the body to seep out from the tissues and blood vessels

Whooping cough- an airborne bacterial infection that affects mostly children younger than 6 years. Pts will be feverish and exhibit a “whoop” sound on inspiration after a coughing attack, highly contagious through droplet infection

Wallenpaupack Area School District Curriculum	
COURSE: Protective Service II – Emergency Medical Technician	GRADE/S: 10-12
UNIT 7: Shock & Resuscitation	TIMEFRAME:

**PA COMMON CORE/NATIONAL STANDARDS: National Highway Traffic and Safety Administration (NHTSA) Education Standards 2021.
NHTSA National Standard Curriculum 2021.
NHTSA Scope of Practice Model 2021.**

UNIT OBJECTIVES (SWBATS): Applies knowledge of the causes, pathophysiology and management of shock, respiratory failure or arrest, cardiac failure or arrest, termination of resuscitative efforts and post resuscitation management.

INSTRUCTIONAL STRATEGIES/ACTIVITIES: Didactic instruction flowed by skills laboratory.

Didactic

- Lecture presentation
- Oral Discussion

Laboratory

- Skills Demonstration
- Equipment demonstration
 - Safety Review
- Scenarios

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

Assessment in Action exercises
 Interactive Lectures
 Written (online) test
 Written (online) quiz
 Laboratory Reflection
 Workbook Assignments
 Reading Logs
 Online Discussion Questions
 Simulated NREMT Test Question
 Cornell Notes
 Classroom Behavioral Affective Domain Evaluation
 Laboratory Behavioral Affective Domain Evaluation

DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

RESOURCES (Technology Based Resources, Text Resources, etc.):

Chapter Slides
 E-book
 Audio book
 Supplemental online videos (explanation, demonstration & visualization of anatomy, diseases, traumatic injuries, task performance, equipment use)
 Test Prep Simulator

KEY VOCABULARY:

AED (automatic external defibrillator)- a device that detects treatable life-threatening cardiac dysrhythmias (Ventricular fibrillation and ventricular tachycardia) and delivers the appropriate electrical shock to the pt

Brachial artery- the major vessel in the upper extremities that supplies blood to the arm

Bradycardia- a slow heart rate, Leeds's than 60 beats/min

Bradypnea- slow resp rate; an ominous sign in a child that indicates impending resp arrest

Brain stem- the area of the brain between the spinal cord and cerebrum, surrounded by the cerebellum; controls functions that are necessary for life, such as resp

Brain- the controlling organ of the body and center of consciousness; function include perception, control of reactions to the environment, emotional responses and judgment

Carotid artery- the major artery that supplies blood to the heart and brain

Chemoreceptors- monitor the levels of oxygen, carbon dioxide, and pH of the cerebrospinal fluid and then provide feedback to the resp centers to modify the rate and depth for breathing based on the body's needs at any given time

Chest compression fraction- the total preventative of time during a resuscitation attempt in which active chest compression is being performed

Circulatory system- the complex arrangement of connected tubes, including the arterioles, capillaries, venules, and veins, that moves blood, oxygen, nutrients, carbon dioxide, and cellular waste throughout the body

Coagulation- the formation of clots to plug open in injured blood vessels and stop blood flow

Compensated shock- the early stage of shock, in which the body can still compensate for blood loss

Conduction- the loss of heat by direct contact (ex. Body part contacts cold object)

Contraindications- conditions that make a particular medication or treatment inappropriate because it would not help, or may harm, a pt

Convection- the loss of body heat caused by air movement (ex. Breeze blowing across the body)

Core temperature- the temp of the central part of the body (Ex. Heart, lungs, and vital organs)

CPR board- a device that provides a firm surface to the pts torso

Decompensated shock- the last stage of shock when the BP is falling

Defibrillate- to shock a fibrillating (chaotically shaking) heart with specialized electrical current in an attempt to restore a normal, rhythmic beat

Distributive shock- a condition that occurs when there is widespread dilation of the small arterioles, small venules, or both

Femoral artery- the major artery to the thigh, a continuation of the external iliac artery. It supplies blood to the lower abdominal wall, external genitalia, and legs. It can be palpated in the groin area

Hypovolemic shock- a condition in which low blood volume, due to massive internal or external bleeding or extensive loss of body water, results in inadequate perfusion

Load-distribution band- a circumferential chest compression device composed of a constricting band and backboard that is either electrically or pneumatically driven to compress the heart by putting inward pressure on the thorax

Mechanical piston device- a device that depresses the sternum via a compressed gas-powered or electric-powered plunger mounted on a backboard

Neurogenic shock- circulatory failure caused by paralysis of the 4 nerves that control the size of the blood vessels, leading to widespread dilation: seen in pts with spinal cord injuries

Obstructive shock- shock occurs when there is a block to blood flow in the heart or great vessels, causing an insufficient blood supply to the body's tissues

Passive ventilation- the act of air moving into and out of the lungs during chest compressions

Posttraumatic amnesia- inability to remember events after an injury

Psychogenic shock- shock caused by a sudden, temporary reduction in blood supply to the brain that causes fainting (syncope)

Return of spontaneous circulation (ROSC)- the return of a pulse and effective blood flow to the body in a pt who previously was in cardiac arrest

Septic shock- shock caused by severe infection, usually a bacterial infection

Shock- a condition in which the circulatory system fails to provide sufficient circulation to maintain normal cellular function; also called hypoperfusion

Ventricular fibrillation- disorganized, ineffective quivering of heart ventricles, resulting in no blood flow and a state of cardiac arrest

Wallenpaupack Area School District Curriculum	
COURSE: Protective Service II – Emergency Medical Technician	GRADE/S: 10-12
UNIT 8: Trauma	TIMEFRAME:

<p>PA COMMON CORE/NATIONAL STANDARDS: National Highway Traffic and Safety Administration (NHTSA) Education Standards 2021. NHTSA National Standard Curriculum 2021. NHTSA Scope of Practice Model 2021.</p>
<p>UNIT OBJECTIVES (SWBATS): Applies knowledge to provide basic emergency care and transportation based on assessment findings for an acutely injured patient.</p>
<p>INSTRUCTIONAL STRATEGIES/ACTIVITIES: Didactic instruction flowed by skills laboratory.</p> <p><u>Didactic</u></p> <ul style="list-style-type: none"> • Lecture presentation • Oral Discussion <p><u>Laboratory</u></p> <ul style="list-style-type: none"> • Skills Demonstration • Equipment demonstration <ul style="list-style-type: none"> ▪ Safety Review • Scenarios
<p>ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative): Assessment in Action exercises Interactive Lectures Written (online) test Written (online) quiz Laboratory Reflection Workbook Assignments Reading Logs Online Discussion Questions Simulated NREMT Test Question Cornell Notes Classroom Behavioral Affective Domain Evaluation Laboratory Behavioral Affective Domain Evaluation</p>
<p>DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):</p>
<p>RESOURCES (Technology Based Resources, Text Resources, etc.): Chapter Slides E-book Audio book Supplemental online videos (explanation, demonstration & visualization of anatomy, diseases, traumatic injuries, task performance, equipment use) Test Prep Simulator</p>
<p>KEY VOCABULARY:</p>

Abrasion- Loss or damage of the superficial layer of skin as a result of a body part rubbing or scraping across a rough or hard surface

Avulsion- an injury in which soft tissues is torn completely loose or hanging as a flap

Axial loading injuries- injuries in which load is applied along the vertical or longitudinal axis of the spine, which results in load being transmitted along the entire length of the vertebral column; (ex. Falling from a height and landing on the feet in a upright position)

Barotrauma- injury caused by pressure to enclosed body surface, for example, from too much pressure in the lungs

Basilar skull fractures- fractures that usually occur following diffuse impact to the head (ex. Falls, MVAs); generally, results from extension off a linear fracture to the base of the skull and can be difficult to diagnose without a radiograph

Battle sign- bruising behind an ear over the mastoid process that may indicate a skull fracture

Bends- a common name for decompression sickness

Beta radiation- a type of energy that is emitted from a strong radiologic source; it is slightly more penetrating than alpha radiation and requires a layer of clothing to stop it

Blow-out fractures- a fracture of the orbit or of the bones that support the floor of the orbit

Blunt trauma- an impact on the body by objects that cause injury without penetrating soft tissues or internal organs and cavities

Brachial artery- the major vessel in the upper extremities that supplies blood to the arm

Bradycardia- a slow heart rate, Leeds's than 60 beats/min

Bradypnea- slow resp rate; an ominous sign in a child that indicates impending resp arrest

Brain stem- the area of the brain between the spinal cord and cerebrum, surrounded by the cerebellum; controls functions that are necessary for life, such as resp

Brain- the controlling organ of the body and center of consciousness; function include perception, control of reactions to the environment, emotional responses and judgment

Burns- injures in which soft-tissue damage occurs because of thermal heat, frictional heat, toxin chemicals, electricity, or nuclear radiation

Carotid artery- the major artery that supplies blood to the heart and brain

Cavitation- a phenomenon in which speed causes a bullet to generate pressure waves, which cause damage distal from the bullet's path

Central nervous system (CNS)- the brain and spinal cord

Central pulses- pulses that are closet to the core (central) part of the body where the vital organs are located; include the carotid, femoral and apical pulses

Cerebellum- one of the three major subdivisions of the brain, sometimes called little brain, coordinates the various activities of the brain, particularly fine body movements

Cerebral edema- swelling of the brain

Cerebrospinal fluid (CSF)- fluid produced in the ventricles of the brain that flows in the subarachnoid space and bathes the meninges

Cerebrum- largest part of the three subdivisions of the brain, sometimes called gray matter; made up of several lobes that controls movement, hearing, balance, speech, visual perception, emotions, and personality

Cervical spine- the portion of the vertebral column consisting of the first seven vertebrae that lie in the neck

Chemoreceptors- monitor the levels of oxygen, carbon dioxide, and pH of the cerebrospinal fluid and then provide feedback to the resp centers to modify the rate and depth for breathing based on the body's needs at any given time

Chest compression fraction- the total preventative of time during a resuscitation attempt in which active chest compression are being performed

Cheyenne-Stroke resp- a cyclical pattern of abnormal breathing that increases and then decreased in rate and depth, following by a period of apnea

Chief complaint- the reason a pt called for help; also, the pt response to questions such as "what's wrong" or "what happened"

Chief concern- the condition requiring the most urgent interventions as determined by the providers assessment of the pt; it is not always the same as the chief complaint

Closed abdominal injury- injury in which there is soft-tissue damage inside the body, but the skin remains intact

Closed chest injury-injury to the chest in which the skin is not broken, usually caused by blunt trauma

Closed fracture- any break in a bone in which the overlying skin is not broken

Closed head injury- injury in which the brain has been injured but the skin has not been broken and there is no obvious bleeding

Closed injuries- injuries in which damage occurs beneath the skin or mucous membrane, but the surface of the skin remains intact

Coagulation- the formation of clots to plug open or injured blood vessels and stop blood flow

Coccyx- the last three or four vertebrae of the spine; the tail bone

Coma- a state of profound unconsciousness from which the pt cannot be roused

Comotio cordis- a blunt chest injury caused by a sudden, direct blow to the chest that occurs only during the critical portion of a person's heartbeat

Compartment syndrome- swelling in a confined space that produces dangerous pressure; may cut off blood flow or damage sensitive tissue

Concussion- a temp loss or alteration of part or all the brains abilities to function without actual physical damage to the brain

Contact burn- a burn by direct contact with hot objects

Contraindications- conditions that make a particular medication n or treatment inappropriate because it would not help, or may harm, a pt

Contusion- a bruise from an injury that causes bleeding beneath the skin without breaking the skin; also see ecchymosis

Convection- the loss of body heat caused by air movement (ex. Breeze blowing across the body)

Core temperature- the temp of the central part if the body (Ex. Heart lungs, and vital organs)

Coup-countercoup Brian injury- a Brian injury that occurs when force is applied to the head and energy transmission through brain tissue causes injury on the opposite side of original impact

Coxae- the hip bones (single- coxa)

Crepitus- a grating or grinding sensation or sound caused by fractured bone ends or joints rubbing together

Crush syndrome- significant metabolic derangement that develops herb crushed extremities or body parts remain trapped for prolonged period. This can lead to renal failed and death

Crushing injury- an injury that occurs when a great amount of force is applied to the body

DCAP-BTLS- a mnemonic for assessment in which each area of the body is evaluated for deformities, contusions, abrasions, punctures/penetrations, burns, tenderness, lacerations, and swelling

Decelerations- the slowing of an object

Denitrogenating- the process of replacing nitrogen in the lungs with oxygen to maintain a normal oxygen saturation level during advanced airway management

Direct injury- an injury to the brain and its associated structures that is a direct result of impact to the head

Dislocation- disruption of a joint in which ligaments are damaged, and the boner ends are no longer vin contact

Displaced fracture- a fracture on which bone fragments are separated for one another, producing deformity in the limb

Distracting injury- any injury that prevents the pt from noticing other injuries he or she may have, even severe injuries; (ex. A painful femur or tibia fracture that prevents the pt from noticing back pain associated with a spinal fracture)

Diving reflex- the slowing of the heart rate caused by submersion in cold water

Drowning- the process of experiencing resp impairment from submersion or immersion in liquid

Dysbarism injuries- any signs and symptoms caused by the difference between the surrounding atmospheric pressure and the total gas pressure in various tissues, fluids, and cavities of the body

False motion- movement that occurs in a bone at a point where there is no joint, indicating a fracture; also called free movement

Femoral artery- the major artery to the thigh, a continuation of the external iliac artery. It supplies blood to the lower abdominal wall, external genitalia, and legs. It can be palpated in the groin area

Femoral head- the proximal end of the femur, articulating with the acetabulum to form the hip joint

Femur- the thighbone; the longest and one of the strongest bones in the body

Fibula- the smaller of the two bones that form the lower leg, located on the lateral side

First-degree burns- burns that affect the epidermis, characterized by skin that is red but not blistered or burned through

Flail chest- a condition in which two or more places or in association with a fracture of the sternum so that a segment of the chest walls is effectively detached for the rest of the thoracic cage

Flame burn- a burn caused by any open flame

Flank- the region below the rib cage and above the hip

Flash burn- a burn caused by exposure to very intense heat, such as in an explosion

Flexion- the bending of a joint

Flutter valve- a one-way valve that allows air to leave the chest cavity but not return; formed by taping 3 sides of an occlusive dressing to the chest wall, leaving the fourth side open as a valve; may also be part of a commercial vented occlusive dressing

Foramen magnum- a large opening at the base of the skull through which the brain connects to the spinal cord

Four-person log roll- the recommended procedure for moving a pt with a suspected spinal injury from the ground to a long backboard or other spinal precaution device

Fowler position- an inclined position in which the head if the bed is raised

Fracture- a break in the continuity of a bone

Fracture- a break in the continuity of a bone

Frontal bones- the bones of the cranium that form the forehead

Frontal plane- an imaginary plane where the body is divided into front and back parts

Full-thickness burns- burns that affect all skin layers and may affect the subcutaneous layer, muscle, bone and internal organs, leaving the area dry, leathery, and white, dark brown, or charred

Functional disorder- a disorder in which there is no known physiologic reason for the abnormal functioning of an organ or organ system

Hemopneumothorax- the accumulation of blood and air in the pleural space of the chest

Hemostatic dressing- a dressing impregnated with a chemical compound that slows or stops bleeding by assisting with clot formation

Hemothorax- a collection of blood in the pleural cavity

Hypovolemic shock- a condition in which low blood volume, due to massive internal or external bleeding or extensive loss of body water, results in inadequate perfusion

Impaled objects- objects that penetrate the skin but remain in place

Incision- a sharp, smooth cut in the skin

Indirect injury- the aftereffects of the primary injury; includes abnormal processes such as cerebral edema, increased intracranial pressure, cerebral ischemia and hypoxia and Infection; onset is often delayed following the primary brain injury

Intervertebral disks- tough, elastic structures between adjoining vertebrae that act as shock absorbers

Intracerebral hematoma- bleeding within the brain tissue (parenchyma) itself; also referred to as an intraparenchymal hematoma

Intracranial pressure (ICP)- the pressure within the cranial vault

Junctional tourniquet- a device that provides proximal compression of severe bleeding near the axial or inguinal junction with the torso

Kinetic energy- the energy of a moving object

Laceration- a deep, jagged cut in the skin

Length-based resuscitation tape- a tape used to estimate an infant or child's weight on the basis of body length; appropriate care dose and equipment sizes care listed on the tape

Linear skull fracture- fractures that commonly occur in the temporoparietal region and that are not associated with deformities to the skull; account for 80% skull fractures; also referred to as non-displaced skull fractures

Multisystem trauma- trauma that affects more than one body system

Nondisplaced fracture- a simple crack in the bone that has not caused the bone to move from its normal anatomic position; also called a hairline fracture

Occlusive dressing- an airtight dressing that protects a wound from air and bacteria; a commercial vented version allows air to passively escape from the chest, while an unvented dressing may be made of petroleum jelly-based (Vaseline) gauze, aluminum foil, or plastic

Open abdominal injury- an injury in which there is a break in the surface of the skin or mucous membrane, exposing deeper tissue to potential contamination

Open chest injury- an injury to the chest in which the chest wall itself is penetrated by a fractured rib or, more frequently, by an external object such as a bulletproof vest or knife

Open fracture- an break in a bone in which the overlying skin has been broken

Open head injury- injury to the head often caused by a penetrating object in which there may be bleeding and exposed brain tissue

Open injuries- injuries in which there is a break in the surface of the skin or the mucous membrane, exposing deeper tissue to potential contamination

Open pneumothorax- an open or penetrating chest wall wound through which air passes during inspiration and expiration, creating a sucking sound; also referred to as a sucking chest wound

Open-book pelvis fracture- a life-threatening fracture of the pelvis caused by a force that displaces one of both sides of the pelvis laterally posteriorly

Paradoxical motion- the motion of the portion of the chest wall that is detached in a flail chest; the motion- in during inhalation, out during exhalation- in exactly the opposite of normal chest wall motion during breathing

Partial-thickness burns- burns that affect the epidermis and some portions of the dermis but not the subcutaneous tissue, characterized by blisters and skin that is white to red, moist, and mottled

Penetrating trauma- injury caused by objects such as knives and bullets, that pierce the surface of the body and damage internal tissues and organs

Penetrating wounds- an injury resulting from a sharp, piercing object

Pericardial tamponade- compression of the heart as the result of buildup of blood or other fluid in the pericardial sac, leading to decreased cardiac output

Pneumothorax- an accumulation of air or gas in the pleural cavity

Potential energy- the product of mass, gravity, and height, which is converted into kinetic energy and results in injury such as from a fall

Primary blast injury- injuries caused by an explosive pressure wave to the hollow organ of the body

Primary injury- an injury to the brain and its associated structures that is a direct result of impact to the head

Projectile- any object propelled by force, such as a bullet by a weapon

Pulmonary blast injuries- pulmonary trauma resulting from short-range exposure to the detonations of high-energy explosive

Pulmonary circulation- the flow of blood from the right ventricle through the pulmonary arteries and all of their branches and capillaries in the lungs and back to the left atrium through the venules and pulmonary veins; also called the lesser circulation

Pulmonary contusion- injury or bruising of lung tissues that results in hemorrhage

Pulmonary veins- the four veins that return oxygenated blood from the lungs to the left atrium of the heart

Raccoon eyes- bruising under the eyes that may indicate a skull fracture

Reduce- to return a dislocated joint or fractured bone to its normal position; to set

Retinal detachment- separation of the retina from its attachment at the back of the eye

Retrograde amnesia- the inability to remember events leading up to a head injury

Revised trauma score (RTS)- a scoring system used for to with head trauma

Scald burn- a burn caused by hot liquids

Second-degree burns- burns that affect the epidermis and some portion of the subcutaneous tissue, characterized by blisters and skin that is white to red, moist and mottled

Simple pneumothorax- any pneumothorax that is free from significant physiological changes and does not cause drastic changes in the vital signs of the pt

Sling- a bandage or material that helps to support the weight of an injured upper extremity

Spontaneous pneumothorax- a pneumothorax that occurs when a weak area on the lung ruptures in the absence of major injury, allowing air to leak into the pleural space

Steam burn- a burn caused by exposure to hot steam

Subarachnoid hemorrhage- bleeding into the subarachnoid space, when the cerebrospinal fluid circulates

Subcutaneous emphysema- a characteristic crackling sensation felt on the palpation of the skin, caused by the presence of air in soft tissues

Subdural hematoma- an accumulation of blood beneath the dura mater but outside the brain

Sucking chest wound- an open or penetrating chest wall wound through which air passes during inspiration and expiration, creating a sucking sound. See also open pneumothorax

Superficial burns- burns that affect only the epidermis, characterized by skin that is red but not blistered or burned through

Tension pneumothorax- an accumulation of air or gas in the pleural cavity that progressively increases pressure in the chest and that's interferes with cardiac function, with potentially fatal results

Thermal burn- a burn caused by heat

Third-degree burns- burn as that affect all skin layers and may affect the subcutaneous layer, muscle, bone, and internal organs, leaving the area dry, leathery, and white, dark brown, or charred

Tourniquet- the bleeding control method used when a wound continues to bleed despite the use of direct pressure; the usefulness of a pt is bleeding severely from a partial or complete amputation

Toxicity levels- indicates the risk that hazardous material poses to the health of an individual who encounters it

Toxicology- the study of toxic or poisonous substances

Toxin- a poison or harmful substance

Traction- longitudinal force applied to a structure

Trajectory- the path a projectile takes once it is propelled

Trauma emergencies- emergencies that are the result of physical forces applied to the body, injuries

Trauma score- a score calculated from 1 to 16, with 16 best possible score, it relates to the likelihood of pt survival, except for a severe head injury. It considers the Glasgow coma scale (GCS) score, resp rate, systolic BP, and capillary refill

Traumatic asphyxia- a pattern of injuries seen after a severe force is applied to the chest, forcing blood from the greater vessels back into the head and neck

Traumatic brain injury (TBI)- a traumatic insult to the brain capable of producing physical, intellectual, emotional, social, and vocational changes

Vapor hazard- the term used to describe danger posed by an agent that enters the body through the resp tract

Vented chest seal- an occlusive dressing designed to allow air to escape through the dressing but not be drawn back in

Wallenpaupack Area School District Curriculum	
COURSE: Protective Service II – Emergency Medical Technician	GRADE/S: 10-12
UNIT 9: Special Patient Populations	TIMEFRAME:

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<p>UNIT OBJECTIVES (SWBATS): Applies knowledge of growth, development and aging and assessment findings to provide basic emergency care and transportation for a patient with special needs.</p>
<p>INSTRUCTIONAL STRATEGIES/ACTIVITIES: Didactic instruction flowed by skills laboratory.</p> <p><u>Didactic</u></p> <ul style="list-style-type: none"> • Lecture presentation • Oral Discussion <p><u>Laboratory</u></p> <ul style="list-style-type: none"> • Skills Demonstration • Equipment demonstration <ul style="list-style-type: none"> ▪ Safety Review <p>Scenarios</p>
<p>ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative): Assessment in Action exercises Interactive Lectures Written (online) test Written (online) quiz Laboratory Reflection Workbook Assignments Reading Logs Online Discussion Questions Simulated NREMT Test Question Cornell Notes Classroom Behavioral Affective Domain Evaluation Laboratory Behavioral Affective Domain Evaluation</p>
<p>DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):</p>
<p>RESOURCES (Technology Based Resources, Text Resources, etc.): Chapter Slides E-book Audio book Supplemental online videos (explanation, demonstration & visualization of anatomy, diseases, traumatic injuries, task performance, equipment use) Test Prep Simulator</p>
<p>KEY VOCABULARY:</p>

Autism spectrum disorder- a group of complex disorders of brain development, characterized by difficulties in social interactions repetitive behaviors, and verbal and nonverbal communications

Bacterial vaginosis- nan overgrowth of bacteria in the vagina; characterized by itching, burning, or pain and possibly a “fishy” smelling discharge

Bariatrics- a branch of medicine concerned with the management (prevention or control) of obesity and allied diseases

Behavior- how a person functions or acts in response to his or her environment

Behavioral crisis- the point at which a person’s reaction to events interfere with activities of daily living; this becomes a psychiatric emergency when it causes a major life interruption, such as attempted suicide

Behavioral health emergency- an emergency in which abnormal behavior threatens a person's own health and safety of another person- (ex. When a person becomes suicidal or homicidal, or has a psychotic episode)

Birth canal- the vagina and cervix

Bloody show- a small amount of blood in the vagina that appears at the beginning of labor and may include a plug of pink-tinged mucus that is discharged when the cervix begins to dilate

Breech presentation- a delivery in which the buttocks come out first

Cerebral palsy- a group of disorders characterized but poorly controlled body movements

Cervix- the lower third, or neck of the uterus

Child abuse- a general term applying to all forms of abuse and neglect of children

Chlamydia- a sexually transmitted disease caused by the bacterium (Chlamydia trachomatis)

Coagulation- the formation of clots to plug open in injured blood vessels and stop blood flow

Conductive hearing loss- hearing loss caused by a faulty transmission of sound waves

Crowning- the appearance of the fetus’s head at the vaginal opening during labor

Drowning- the process of experiencing resp impairment from submersion or immersion in liquid

Developmental disability- insufficient development of the brain, resulting in some level of dysfunction or impairment

Do not resuscitate order (DNR)- written documentation by a physician giving permission to medical personnel not to attempt resuscitation in the event of cardiac arrest

Eclampsia- a pregnancy complication that is characterized by new-onset hypertension (systolic BP over 140 mm Hg or diastolic BP greater than 90 mm Hg) with seizure activity and preceding systemic effects, such as blurred vision, headache, or protein in the urine. It is differentiated from pre-eclampsia by the presence of seizures activity

Ectopic pregnancy- a pregnancy that develops outside the uterus, typically in a fallopian tube

Elder abuse- an action on the part of an older person's family member, caregiver, or other associated person that takes advantage of the older person's person, property, or emotional state

Emancipated minor- a person who is under the legal age in each state but, because of other circumstances, is legally considered an adult

Embryo- the early stage of development after the fertilization of the egg (first 10 weeks)

Endometrium- the lining of the inside of the uterus

Envenomation- the act of injecting venom

Fallopian tubes- the tubes that connect each ovary with the uterus and are the primary location for fertilization of the ovum

Fetal alcohol syndrome- a condition caused by the consumption of alcohol by a pregnant woman; characterized by growth and physical problems, mental retardation and a variety of congenital abnormalities in her child

Fetus- the developing, unborn infant inside the uterus, from 10 weeks after fertilization until birth

Fontanelles- areas where the neonates or infant's skull has not fused together; usually disappear at approx. 18 months of age

Foodborne transmission- the contamination of food or water with an organism that can cause disease

Forcible restraint- the act of physical preventing an individual from initiating any physical action

Frostbite- damage to tissues as the result of exposure to cold; frozen or partially frozen body parts are frostbitten

Fundus- the dome-shaped top of the uterus

Geriatrics- the assessment and treatment of disease in someone who is age 65 years or older

Gestational diabetes- diabetes that develops during pregnancy in women who did not have diabetes before pregnancy

Gestational hypertension- a blood pressure greater than or equal to 140 mm Hg systolic or 90 mm Hg diastolic in a pregnant female in whom hypertension has not previously been diagnosed

Gonorrhea- a sexually transmitted disease caused by Neisseria Gonorrhoea

Heat exhaustion- a heat emergency in which a significant amount of fluid and electrolyte loss occurs because of heavy sweating; also called heat prostration or heat collapse

Heatstroke- a life-threatening condition of severe hyperthermia caused by exposure to excessive natural or artificial heat, made by warm, dry skin; severely altered mental status; and often irreversible coma

Hemophilia- a hereditary condition in which the part lacks one or more of the blood's normal clotting factors

Histamines- chemical substances released by the immune system in allergic reactions that are responsible for many of the symptoms of anaphylactic, such as vasodilation,

Hymenoptera- a family of insects that include bees, wasps, ants and yellow jackets

Incubation- the period of time between a person being exposed to an agent and the time when symptoms appear

Indirect contact- exposure or transmission of disease from one person to another by contact with a contaminated object

Induced abortion- the elective termination of a pregnancy prior to the time of viability

Infancy- the first year of life

Infant- a young child aged 1 month to 1 year

Infection Control- procedures to reduce transmission of infection among pts and health care personnel

Infection disease- a medical condition caused by the growth and spread of small, harmful organisms within the body

Influenza- A virus that has crossed the animal/human barrier and infected humans and kills thousands of people every year\

Influenza type A- virus that has crossed the animal/human barrier and infected humans, recently reaching a pandemic level with the H1N1 strain

Ingestion- Swallowing; taking a substance by mouth

Inhalation- the active, muscular part of breathing that draw air into the airway and lungs; a medication

Labia majora- outer fleshy "lips" covered with pubic hair that protects the vagina

Labia minora- inner fleshy "Lips" devoid of pubic hair that protects the vagina

Lightening- the movement of the fetus down into the pelvis late in pregnancy

Limb presentation- a delivery in which the presenting part is a single arm or leg

Meconium- fetal stool/ when appearing as a darkly green material in the amniotic fluid, it can indicate distress or disease in the newborn; it can be aspirated into the fetus's lungs during delivery

Menarche- the first menstrual cycle or onset of the first menstrual bleeding in females

Menopause- the cessation of menstruation, typically in the fourth or fifth decade of life

Miscarriage- the spontaneous passage of the fetus and placent before 20 weeks; also called spontaneous abortion

Moro reflex- an infant reflex in which, when an infant is caught off guard, the infant opens his or her arms wide, spreads the fingers, and seem to grab at things

Multigravida- a woman who has had previous pregnancies

Neisseria meningitidis- a form of bacterial meningitis characterized by rapid onset of symptoms, often leading to shock and death

Neonate- a newborn age birth to 1 month

Nuchal cord- an umbilical cord that is wrapped around the fetus's neck

Older adult- an adult age 61 years or older

Ovaries- the primary female reproductive organ that produce an ovum, or egg, that, is fertilized, will develop into a fetus

Ovulation- the process in which an ovum is released from a follicle

Palmer grasp reflex- an infant reflex that occurs when something is placed in the infant's palm; the infant's grasps the object

Pediatric assessment triangle (PAT)- a structure assessment tool used to rapidly form a general impression of the infant or child without touching him or her; consists of assessing appearance, work of breathing and circulation to the skin

Pediatrics- a specialized medical practice devoted to the care of the young

Pelvic inflammatory disease (PID)- infection of the fallopian tubes and the surrounding tissues of the pelvis

Pertussis- an airborne bacterial infection that affects mostly children younger than 6 years. Pts will be feverish and exhibit a "whoop" sound on inspiration after a coughing attack, highly contagious through droplet infection

Placenta previa- a condition in which the placenta develops over the cervix

Placenta- the tissue attached to the uterine wall that nourishes the fetus through the umbilical cord

Postconventional reasoning- a type of reasoning in which a child bases decisions on his or her conscience

Posttraumatic stress disorder (PTSD)- a delayed stress reaction to a prior incident. Often the result of one or more unresolved issues concerning the incident, and may relate to an incident that involved physical harm, or the threat to physical harm

Preconventional reasoning- a type of reasoning in which a child acts almost purely to avoid punishment or to get what he or she wants

Preeclampsia- a pregnancy complication that is characterized by new-onset hypertension (systolic BP greater than 140 mm Hg or diastolic BP greater than 90 mm Hg) along with systemic effects, such as blurred vision, headache, or protein in the urine. Differentiated from eclampsia by the lack of seizure activity

Presbycusis- an age-related condition of the ear that produces progressive bilateral hearing loss that is most noted at higher frequencies

Preschool- age- children between ages 3 and 6 years

Preschooler- a child aged 3 to 6 years

Presentation- the position in which an infant is born; defined by the part of the body that appears first

Prolapse of the umbilical cord- a situation in which the umbilical cord comes out of the vagina before the fetus

Rape- sexual intercourse forcible inflicts on another person, against the persons will.

Resp syncytial virus- a virus that causes an infection of the lungs and breathing passages; can lead to other serious illnesses that affect the lungs or heart, such as bronchiolitis and pneumonia. RSV is highly contagious and spread through droplets

Rooting reflex- an infant reflex that occurs when something touches an infant's cheek, and the infant instinctively turns his or her head towards the touch

School age- a person who is 6 to 12 years of age

Sexual assault- an attack against a person that is sexual in nature, the most common is rape

Shaken baby syndrome-a syndrome seen in abused infants and children; the pt has been subjected to violent, whiplash-type shaking injuries inflicted by the abusing individual that may cause coma, seizures, and increased intracranial pressure due to tearing of the cerebral veins with consequent bleeding into the brain

Shunts- tubes that drain excess cerebrospinal fluid from the Brain to another part of the body outside of the brain, such as the abdomen; lowers pressure in the brain

Sickle cell disease- a hereditary disease that causes normal, round red blood cells to become oblong, or sickle shaped

Sniffing position- an upright position in which the pt.'s head and chin are thrust slightly forward to keep the airway open

Spina Bifida- a development defect in which portion of the spinal cord or meninges may protrude outside of the vertebrae and possibly even outside the lower third of the spine in the lumbar area

Spontaneous abortion- the loss of a pregnancy prior to 20 weeks of gestation without any preceding surgical or medical interventions. Often called a miscarriage

Sucking reflex- an infant reflex in which the infant starts sucking when his or her lips are stroked

Sudden infant death syndrome (SIDS)- death of an infant or young child that remains unexplained after a complete autopsy

Supine hypotensive syndrome- low BP resulting from compression of the inferior vena cava by the weight of the pregnant uterus when the woman is supine

Surfactant- a liquid protein substance that coats the alveoli in the lungs, decreases alveolar surface tension, and keeps the alveoli expanded; a low level in a premature infant contributes to resp distress syndrome

Toddler- a child aged 1 to 3 years

Umbilical cord- the structure that connects the pregnant woman to the fetus via the placenta; contains two arteries and one vein

Umbilicus- the navel; also called the belly button

Uterus- the muscular organ when the fetus grows; also called the womb; responsible for contractions during labor

Vagina-the outermost cavity of a woman's reproductive tract; the lower part of the birth canal

Vernix caseosa- a white, Cheesy substance that covers the body of the fetus

Vertex presentation- a delivery in the head of the newborn comes out first

Work of breathing- an indicator of oxygenation and ventilation; reflects the child's attempt to compensate for hypoxia

Wallenpaupack Area School District Curriculum	
COURSE: Protective Service II – Emergency Medical Technician	GRADE/S: 10-12
UNIT 10: EMS Operations	TIMEFRAME:

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<p>UNIT OBJECTIVES (SWBATS): Knowledge of operational roles and responsibilities to ensure patient, public and personnel safety.</p>
<p>INSTRUCTIONAL STRATEGIES/ACTIVITIES: Didactic instruction flowed by skills laboratory.</p> <p><u>Didactic</u></p> <ul style="list-style-type: none"> • Lecture presentation • Oral Discussion • Cornell Notes <p><u>Laboratory</u></p> <ul style="list-style-type: none"> • Skills Demonstration • Equipment demonstration <ul style="list-style-type: none"> ▪ Safety Review • Scenarios
<p>ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative): Assessment in Action exercises Interactive Lectures Written (online) test Written (online) quiz Laboratory Reflection Workbook Assignments Reading Logs Online Discussion Questions Simulated NREMT Test Question Cornell Notes Classroom Behavioral Affective Domain Evaluation Laboratory Behavioral Affective Domain Evaluation</p>
<p>DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):</p>
<p>RESOURCES (Technology Based Resources, Text Resources, etc.): Chapter Slides E-book Audio book Supplemental online videos (explanation, demonstration & visualization of anatomy, diseases, traumatic injuries, task performance, equipment use) Test Prep Simulator</p>
<p>KEY VOCABULARY:</p>

Active shooter event- an act of terror in which firearms are used in an ongoing assault of multiple people

Antidote Treatment Nerve Agent Autoinjector (ATNAA)- a nerve agent antidote kit containing atropine and pralidoxime chloride; delivered as a single dose through one needle

Bills of lading- the shipping papers used for transport of chemicals over roads and highways; also known as freight bills

Blind spots- areas of the road that are blocked from your view by your vehicle or mirrors

Bloodborne pathogens- pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, Hepatitis B and human immunodeficiency virus (HIV)

B-NICE- a memory device to recall the types of weapons of mass destruction; biological, nuclear, incendiary, chemical, and explosive

Bulk storage containers- any container other than a bulk storage container, such as fixed tanks, highway cargo tanks, rail tank cars, and intermodal tanks. Typically found in manufacturing facilities and are often surrounded by a secondary containment system to help control an accident release

Carboys- glass, plastic, or steel containers, ranging in volume from 5 to 15 gallons (19-57L)

Casualty collection area- an area set up by physicians, nurses, and other hospital staff near a major disaster scene where patients can receive further triage and medical care

Chemical Transportation emergency center- an agency that assists emergency responders to identifying and handling Haz-mat transport incidents

CHEMTREC- an agency that assists emergency responders to identifying and handling haz-mat transport incidents

Chlorine (Cl⁺)- the first chemical agent ever used in warfare. It has a distinct odor of bleach and creates a green haze when released as a gas. Initially it produces upper airway irritation and a choking sensation

Cleaning- removing dirt, dust, blood or other visible contaminants from the surface

Closed incident- an incident that is contained; all casualties are accounted for

Cold zone- a safe area at a Haz-mat incident for the agencies involved in the operations. The IC, the command post, EMS providers, and other support functions necessary to control the incident should be in this zone. Also called, clean zone and support zone

Command- in incident command, the position that oversees the incident, establishing the objectives and priorities and developing a response plan

Complex access- entry requires special tools and training and includes the use of force

Concealment- the use of objects to limit a person's ability to see you

Contact hazard- the danger by a chemical whose primary route of entry into the body is through the skin; posed by a hazardous agent that gives off very little or no vapors; also called a skin hazard

Container- any vessel or receptacle that holds material, including storage vessels, pipelines and packaging

Control zones- areas at a Haz-mat incident that are designated as hot, warm, or cold, based on safety issues and the degree of hazard found there

Cover- tactical use of an impenetrable barrier for protection

Covert- an act in which the public safety community generally has no prior knowledge of the time, location or nature of the attack

Crew resource management (CRM)- a set of procedures for use in environments where human error can have disastrous consequences. It empowers people within a team to communicate effectively with one another with a goal of improving team situational awareness, pt and crew safety, and overall communication

Critical incident stress management (CISM)- a process that confronts the responses to critical incidents and defuses them, directing the emergency services personnel toward physical and emotional equilibrium

Cushion of safety- a safe distance between your vehicle and any vehicle around you

CX- a blistering agent that has a rapid onset of symptoms and produces immediate, intense pain and discomfort or contact; also called **Phosgene Oxime**

Cyanide- an agent that affects the body's ability to use oxygen. It is a colorless gas that has an odor like almonds. The effects beginning on a cellular level are very rapidly seen at the organ system

Cylinder- portable, compressed gas containers used to hold liquids and gases such as nitrogen, argon, helium, and oxygen. They have a range of sizes and internal pressures

Danger (hot) zone-an area where people can be exposed to hazards such as electric wires, sharp metal edges, broken glass, toxic substances, radiation or fire

Decay- a natural process in which a material that is unstable attempts to stabilize itself by changing its structure

Decompression sickness- a painful condition seen in divers who ascend too quickly, in which gas, especially nitrogen forms bubbles in blood vessels and other tissues; see bends

Decontamination area- the designated area in a Haz-mat incident where all patients and responders must be decontaminated before going to another area

Decontamination- the process of removing or neutralizing and properly disposing of haz-mat from equipment, pts, and responders

Dedicated line- a special telephone line that is used for specific point-to point communication; also known as a hotline

Delayed stress reaction- reactions to stress that occur after a stressful situation

Demobilization- the process of directing responders to return to their facilities when work as disaster or mass-casualty incident has finished, at least for those responders

Designated officer- the individual on the department who is charged with a responsibility of managing exposure and infection control issues

Developmental disability- insufficient development of the brain, resulting in some level of dysfunction or impairment

Diamond carry- a carrying technique in which one provider is located at the head end of the stretcher or backboard, one at the foot end, and one at each side of the pt; each of the two providers at the sides uses one hand to support the stretcher or backboard so that all are able to face forward as they walk

Direct contact- exposure or transmission of a communicable disease from one person to another by physical contact

Dirty bomb- name given to an explosive radiological dispersal device

Disaster- a widespread event that disrupts community resources and functions, in turn threatening public safety, citizens lives, and property

Disease vector- an animal that, once infected, spreads a disease to another animal

Disinfection- the killing of pathogenic agents by direct application of chemicals

Dissemination- how a terrorist with spread an agent, for ex. By poisoning the water supply or aerosolizing the agent into the air or ventilation system of a building

Domestic terrorism- terrorism that is carried out by people in their own country

Drag- resistance that slows a projectile, such as air

Drums- barrel-like containers used to store a wide variety of substances, include food-grade materials, corrosive, flammable liquids, and grease. May be constructed of low-carbon steel, polyethylene, cardboard, stainless steel, nickel or other materials

Emergency Response Guidebook (ERG)- a preliminary action guide for first responders operating at the haz-mat incident in coordination with the US DOT labels and placards marking system, jointly developed by the DOT, the secretariat of communication and transportation of Mexico and Transport Canada

Entrapment- to be caught (trapped) within a vehicle, room or container with no way out or to have a limb or other body part trapped

Evaporation- the conversion of water an another fluid from a liquid to a gas

Evisceration- the displacement of organs outside the body

Exposure- a situation in which a person has had contact with blood, body fluids, tissues, or airborne particles in a manner that suggests disease transmission may occur

Extraction supervisor- in incident command, the Person appointed to determine the type of equipment and resources needed for a situation involving extrication or special rescue; also known as rescue officer

Extrication- removal of a pt from entrapment or a dangerous situation or position, such as removal from a wrecked vehicle, industrial incident or collapsed building

Freight bills- the shipping papers used for trans depot of chemical along roads and highways; also referred to as bills of lading

G agents- early nerve agents that were developed by German scientists in the period after WW1 and into WW2. There are three such agents: sarin, soman, and tabun

GA (Tabun)- a nerve agent that is one of the G agents; 36 times more persistent than sarin and approximately one-half as lethal; has a fruity smell and is unique because the components used to manufacture the agent are easy to acquire and the agent is easy to manufacture

Gamma radiation- a type of energy that is emitted from a strong radiologic source that faster and has more energetic than alpha and beta rays. These rays easily penetrate through the human body and require lead of several inches of concrete to prevent penetration

GB (Sarin)- a nerve agent that is one of the G agents; a highly volatile colorless and odorless liquid that turns from liquid to gas within seconds to minutes at room temp

GD (Soman)- a nerve agent is one of the G agents; twice as persistent as sarin and five times as lethal; it has a fruity odor because of the type of alcohol used in the agent, and is a contact and an inhalation hazard that can enter the body through skin absorption and through there resp tract

Gel- a semiliquid substance that is administered orally in capsules form or through plastic tubes

H (mustard gas)- a vesicant; it is a brown-yellow oily substance that is generally considered very persistent; has the distinct smell of garlic or mustard and when released, is quickly absorbed into the skin and/or mucous membrane and begins an irreversible process of damaging the cells; also called mustard gas

Hazardous material (Haz-mat)- and substance that is toxic, poisonous, radioactive, flammable, for explosive and causes injury or death with exposure

Haz-Mat incident- an incident in which a Haz-mat is no longer properly contained and isolated

High-level disinfection- the killing of pathogenic agents by using potential means of disinfection

Hot zone- the area immediately surrounding a haz-mat material spill or incident site that endangers life and health. All responders working in this zone must wear appropriate protective clothing and equipment. Entry requires approval by the incident commander or other designated officer

Hydroplaning- occurs when the tires of a vehicle are lifted off the road surface as a result of water piling up underneath them, making the vehicle feel as though it is floating

Hydrostatic pressure- the pressure of water against the walls of its container

Incident action plan- an oral or written plan stating general objectives reflecting the overall strategy from managing an incident

Incident Command (IC)- the individual who has overall command of the incident in the field

Incident command system (ICS)- a system implemented to manage disasters and mass-casualty incidents in which section chiefs, including finance/ administration, logistics, operations, and planning, report to the incident commander

Intermodal tanks- shipping and storage vessels that can be either pressurized or non-pressurized

International terrorism- Terrorism that is carried out by people in a country other than their own; also known as cross- border terrorism

Ionizing radiation- energy that is emitted in the form of rays, or particles

Joint information center (JIC)- an area designed by the IC, or a designee, in which public information officers from multiple agencies distribute info about the incident

JumpSTART triage (Simple Triage and Rapid Treatment) - a sorting system for ped pts younger than 8 years or weighing less than 100 pounds (45 Kg). There is a minor adaptation for infants because they cannot ambulate on their own.

L (Lewisite)- a blistering agent that has a rapid onset of system and produces immediate pain and discomfort on contact

Liaison officer- in incident command, the person who relays info, concerns and requests among responding agencies

Logistics- In incident command, the position that helps procure and stockpile equipment and supplies during an incident

Lone wolf terrorist attack- an act of terror carried out by a single person to further an ideological goal

Mass-casualty incident (MCI)- an emergency involving three or more patients or that can place great demand on the equipment or personnel of the EMSN system or has the potential to produce multiple casualties

Material safety data sheet (MSDS)- a form, provided by manufacturers and compounds (blenders) of chemicals, containing info about chemical composition, physical and chemical properties, health and safety hazards, emergency response and waste disposal of a specific material; also known as a safety data sheet (SDS)

National incident management system (NIMS)- a department of homeland security designed to enable federal, state, and local governments and private-sector and non-governmental organizations to effectively and efficiently prepare for, prevent, respond to, and recover from domestic incidents, regardless of care, size, or complexity, including acts of catastrophic terrorism

Nerve agents- a class of chemicals called organophosphate; they function by blocking an essential enzyme in the nervous system, which causes the body's organs to become overstimulated and burn out

Neurotoxins- biological agents that are the deadliest substances known to humans; they include botulinum toxin and ricin

Neutron radiation- the type of energy that is emitted from a strong radiologic source, involving particle that are among the most powerful forms of radiation; the particles easily penetrate through lead and require several feet of concrete to stop them

No bulk storage vessels- a container other than bulk storage containers, such as drums, bags, compressed gas cylinders, and cryogenic containers. These containers hold commonly used industrial chemicals such as solvents, industrial cleaners, and compounds

Off-gassing- the releases of an agent after exposure; for example, from a person's clothes that have been exposed to the agent

Open incident- an incident that is not yet contained; there may be pts to be located, and the situation may be ongoing, producing more patients

Operations- in IC, the position that carried out the orders of the commander to help resolve the incident

Persistency- how long the chemical agent will stay on a surface before it evaporates

Phosgene- a pulmonary agent that is a product of combustion, resulting from a fire at a textile factory or house, or from metalwork or burning Freon. It is a very potent agent that has a delayed onset of symptoms usually hours

Phosgene oxime- a blistering agent that has a rapid onset of symptoms and produces immediate, intense pain and discomfort on contact

Placards- signage required to be placed on all four sides transport vehicle, railroad tank cars, and other forms of haz-mat transportation; the sign identified the hazardous contents of the vehicle, using a standardization system with diamond-shaped indicators

Planning- in IC the position that ultimately produces a plan to resolve any incident

Points of distribution (PODs)- existing facilities used as mass distribution site for antibiotics, antidotes, vaccinations, and other medications and supplies during an emergency

Primary triage- a type of pt sorting used to rapidly categorize pt; the focus is on speed in locating all pt and determining an initial priority as warranted by their condition

Public information officer (PIO)- in IC, the person who keeps the public informed and relates any info to the media

Public information officer- in IC, the person who keeps the public informed and relates any info to the media

Quaternary blast injury- a blast injury that falls into one of the following categories: burns, crush injuries, toxic inhalation, medical, emergencies, or mental health disorders

Radiation- the transfer of heat to colder objects in the environment by radiant energy; for ex, heat gains from a fire

Radioactive material- any material that emits radiation

Radiologic dispersal device- any container that is designed to disperse radioactive material

Rapid extrication techniques- a technique to move a pt from a sitting position inside a vehicle to supine on a backboard in less than 1 min when conditions do not allow for standard immobilization

RDD- any container that is designed to disperse radioactive material

Rehabilitation area- the area that provides protection and treatment to fire firefighters and other responders working at an emergency. Here, workers are medically monitored and receive any needed care as they enter and leave the scene

Rehabilitation supervisor- in IC, the person who establishes an area that provides protection for responders from the elements and the situation

Rescue supervisor- in IC, the person appointed to determine the type of equipment and resources needed for a situation involving extrication or special rescue; also called the extrication officer

Reverse triage- a triage process used in treating multiple victims of a lightning strike, in which efforts are focused on those who are in resp and cardiac arrest. Reverse triage is different from conventional triage when such pts would be classified as deceased

Ricin- a neurotoxin derived from mash of the castor bean; caused pulmonary edema and respiratory and circulatory failure leading to death

Route of exposure- how a toxic substance enters the body

Safe zone- an area of protection providing safety from danger zone (hot zone)

Safety officer- in IC, the person who monitors the scene for conditions or operations that may present a hazard to responders and pts; he or she may stop an operation when responders' safety is an issue

Sarin- a nerve agent that is one of the G agents; a highly volatile colorless and odorless liquid that turns from liquid to gas within seconds to minutes at room temperature

Scuba gear- a system that delivers air to the mouth and lungs at verminous atmospheric pressures, including with the depth of the diving, self-contained underwater breathing apparatus

Secondary blast injury- a penetrating or non-penetrating injury caused by ordnance projectiles or secondary misses

Secondary containment- an engineered method to control a spilled or released product if the main containment vessel fails

Secondary device- a secondary explosive used by terrorists, set to explode after the initial bomb

Secondary injury- the aftereffects of the primary injury; includes abnormal processes such as cerebral edema, increased intracranial pressure, cerebral ischemia and hypoxia, and infection; onset is often delayed following the primary injury

Secondary prevention- efforts to limit the effects of an injury or illness that you cannot completely prevent

Secondary triage- a type of pt sorting used to the treatment area that involves re-triage of patients

Self-contained breathing apparatus (SCBA)- respirator with independent air supply used by firefighters to enter toxic and otherwise dangerous atmospheres

Sensorineural deafness- a permanent local of hearing caused by a lesion or damage of the inner ear

Simple access- access that is easily achieved without tools or force

Single command System- a command system in which one person is in charge; generally used with small incidents that involve only one responding agency or one jurisdiction

Smallpox- a highly contagious viral disease; it is most contagious when blisters begin to form

Soman- a nerve agent that is one of the G agents; twice as persistent as sarin and five times as lethal; it has a fruity odor as a result of the type of alcohol used in the agent, and is a contact and an inhalation hazard that can enter the body through skin absorption and through the resp tract

Span of control- in IC, the subordination position under the commander's direction to which the workload is distributed; the ideal supervisor/ worker ratio is one supervisor of 5 subordinates

Special atomic demolition munitions (SADM)- small suitcase-sized nuclear weapons that were designed to destroy individual targets, such sad important buildings, bridges, tunnels and large ships

Special weapons and tactics team- specialized law enforcement tactics unit

Splint- a flexible or rigid device used to protect and maintain the position of an injured extremity.

Spotter- a person who assists a driver in backing up an ambulance to help adjunct for blind spots at the back of the vehicle

Sprain- a joint injury involving damage to supporting ligaments, and sometimes partial or temporary dislocation of bone ends

Staging supervisor- in IC, the person who locates an area to stage equipment and personal and tracks units arrival and deployment from the staging area

START triage- a pt sorting process that stands for simple triage and rapid treatment and uses a limited assessment of the pts ability to walk, resp status, hemodynamic status, and neurological status

State-sponsored terrorism- terrorism that is funded and/or supported by nations that hold close ties with terrorist groups

Structure fire- a fire in a house, apartment building, office, school, plant, warehouse, or other building

Sulfur mustard- a vesicant; it is a brown-yellow oily substance that is generally considered very persistent; has the distinct smell of garlic or mustard and, when released, is quickly absorbed into the skin and/or mucous membranes and begins an irreversible process of damaging the cells. Also called mustard gas

SWAT team- a specialized law enforcement tactical unit

Syndromic surveillance- the monitoring, usually by local or state health departments, of presenting to emergency departments and alternative care facilities, the recording of EMS call volume, and the use of over-the-counter medications

Tabun- a nerve agent that is one of the G agents; 36 times more persistent than sarin and approx. one-half as lethal; has a fruity smell and is unique because the components used to manufacture the agent are easy to acquire and the agent is easy to manufacture

Tactical situation- a hostage, robbery or other situation in which armed conflict is threatened or shots have been fired and the threat of violence remains

Technical rescue group- a team of emergency responders from one or more departments in a region who are trained and on call for certain types of technical rescue

Technical rescue situation- a rescue that requires special technical skills and equipment in one of many specialized rescue areas, such as technical rope rescue, cave rescue, and dive rescue

Termination of command- the end of the incident command structure when an incident draws to a close

Tertiary blast injury- an injury from whole-body displacement and subsequent traumatic impact with environmental objects

Transportation area- the area in a mass-casualty incident where ambulances and crews are organized to transport patients from the treatment area to receiving hospitals

Transportation supervisor- in IC, the person in charge of the transportation sector in a mass-casualty incident who assigns patients from the treatment area to waiting ambulances in the transportation area

Treatment area- the location in a mass-casualty incident where patients are brought after being triaged and assigned a priority, where they are reassessed, treated, and monitored until transport to the hospital

Treatment supervisor- in IC, the person, usually a physician, who oversees and directs EMS providers at the treatment area in a mass-casualty incident

Triage supervisor- in IC, the person, usually a physician, who oversees and directs EMS providers at the treatment area in a mass-casualty incident

Triage- the process of establishing treatment and transportation priorities according to severity of injury and medical need

Unified command system- a command system used in large incidents in which there is a multiagency response, or multiple jurisdictions are involved

V/Q ratio- a measurement that examines how much gas is being Miocene effectively and how much blood is flowing around the alveoli where gas exchange (perfusion) occurs

Vesicants- blister agents; the primary route of entry for such agents is through the skin

Virulence- the strength or ability of a pathogen to produce disease

Volatility- how long a chemical agent will stay on a surface before it evaporates

VX- one of the G agents; it is a clear, oily agent that has no odor and looks like baby oil; more than 100 times more lethal than sarin and extremely persistent

Warm zone- the area located between the hot zone and the cold zone at a hazardous material incident. The decontamination corridor is in this zone

Weapon of mass casualty (WMC)- any agent designed to bring about mass death, casualties, and/or massive damage to property and infrastructure (bridges, tunnels, airports, and seaports); also known as a weapon of mass destruction (WMD)

Weapon of mass destruction (WMD)- any agent designed to bring about mass death, casualties, and/or massive damage to property and infrastructure (bridges, tunnels, airports, and seaports); also known as a weapon of mass casualty (WMC)

Weaponization- the creation of a weapon from a biological agent that is generally found in nature and that causes disease; the agent is cultivated, synthesized, and/or mutated to maximize the target population's exposure to the germ

X-ray radiation- a type of energy that is emitted from a strong radiological source that travels faster and has more energy than alpha and beta rays. These rays easily penetrate through the human body and require lead or several inches of concrete to prevent penetration

Zone of injury- the area of potentially damaged soft tissue, adjacent nerves, and blood vessels surround an injury to s bone or a joint.

Wallenpaupack Area School District Curriculum	
COURSE: Protective Service II – Emergency Medical Technician	GRADE/S: 10-12
UNIT 11: Clinical Behavior & Judgement	TIMEFRAME:

<p>PA COMMON CORE/NATIONAL STANDARDS: National Highway Traffic and Safety Administration (NHTSA) Education Standards 2021. NHTSA National Standard Curriculum 2021. NHTSA Scope of Practice Model 2021.</p>
<p>UNIT OBJECTIVES (SWBATS): The student must demonstrate the ability to perform an adequate assessment and implement an adequate treatment plan. These can be performed in an emergency department, ambulance, or clinic.</p> <p>The student should participate in and document patient contacts in a field experience in an ambulance, and simulated environment when ambulance experience is not available as approved by the medical director and program director. This occurs in an ambulance experience setting.</p> <p>Perform knowledge, skill and professional behavior evaluation based on educational standards and program objectives.</p>
<p>INSTRUCTIONAL STRATEGIES/ACTIVITIES: Hospital/Field experience</p> <ul style="list-style-type: none"> ▪ Students are placed in a live medical setting on an Ambulance, in a Hospital ER or out-patient Urgent Care where they work, learn, observe, interact with healthcare providers of multiple levels who oversee and critique students’ performance and interactions with live patients in real situations.
<p>ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative): Completion of patient care report (PCR) for each patient contact. Clinical / Field Behavioral Evaluation</p>
<p>DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):</p>
<p>RESOURCES (Technology Based Resources, Text Resources, etc.): Practical Instructions, evaluation and remediation with Clinical Preceptor. Real-life, real-time situations. Student performing in the role of EMT under supervision of Certified Provider at minimum level of EMT-Basic.</p>
<p>KEY VOCABULARY:</p>