

# 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	
<b>COURSE: Protective Service II – Emergency Medical Technician</b>	<b>GRADE/S: 10-12</b>
<b>UNIT 1: Preparatory</b>	<b>TIMEFRAME:</b>

**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  
 eBook  
 Flashcards  
 Audiobook

Lecture Outline

Case Studies

Assessment in Action

Skills Drills ppp

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 it's blood into the aorta;p 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 the 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 storage 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 cardinal muscles cells to contract without stimulation from the nervous system

**Axial plane**- and 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 used 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 until 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 in 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 patient's condition after considering the situation, history, and examination findings

**Finance/ administration**- in IC, the position in an 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 device when secured around a patient but can be folded or rolled when not in use

**Flexion**- the bending of a joint

**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 of 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 patient outcomes

**General impression**- the overall initial impression that determines the priority for patient care; based on the patient's surroundings, the mechanism of injury, signs and symptoms, and the chief complaint

**Glenoid fossa**- the part of the scapula that joins with the humeral 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 if a parent

**Index of suspicion**- Awareness the unseen life-threatening injuries may exist when determine 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 activity

**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 in 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 designed 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**- physicians 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 Baird 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 of 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 a 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<sup>3</sup>

**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 EMTs 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 reading 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 onion 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 is nearly every organ to regulate automatic activity

**Solid organs**- solid masters 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 thar 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 pr 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 they 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 construction 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 eat 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 sound 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

**Zygomias-** 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	
<b>COURSE: Protective Service II – Emergency Medical Technician</b>	<b>GRADE/S: 10-12</b>
<b>UNIT 2: Public Health</b>	<b>TIMEFRAME:</b>

**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 followed 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

eBook

Flashcards

Audiobook

Lecture Outline

Case Studies

Assessment in Action

Skills Drills ppp

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	
<b>COURSE: Protective Service II – Emergency Medical Technician</b>	<b>GRADE/S: 10-12</b>
<b>UNIT 3: Pharmacology</b>	<b>TIMEFRAME:</b>

**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):**

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Assessment in Action

Skills Drills ppp.

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 drugs if 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 naris

**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 if 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 pt 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 resp 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 in into 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 pt 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	
<b>COURSE: Protective Service II – Emergency Medical Technician</b>	<b>GRADE/S: 10-12</b>
<b>UNIT 4: Airway Management, Respiration &amp; Ventilation</b>	<b>TIMEFRAME:</b>

**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  
 eBook  
 Flashcards  
 Audiobook  
 Lecture Outline  
 Case Studies  
 Assessment in Action  
 Skills Drills ppp.  
 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 (CO<sub>2</sub>)**- 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

**Cheyne-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 n 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 dose contain air and cannot participate in gas exchange, such a 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 CO<sub>2</sub> (EtCO<sub>2</sub>)**- the amount of carbon dioxide presents at the enhanced 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-pitched 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	
<b>COURSE: Protective Service II – Emergency Medical Technician</b>	<b>GRADE/S: 10-12</b>
<b>UNIT 5: Assessment</b>	<b>TIMEFRAME:</b>

**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

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  
eBook  
Flashcards  
Audiobook  
Lecture Outline  
Case Studies  
Assessment in Action  
Skills Drills ppp.  
Supplemental online videos (explanation, demonstration & visualization of anatomy, diseases, traumatic injuries, task performance, equipment use)  
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

**Cheyenne-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 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

**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 into two arms stretched forwards 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	
<b>COURSE: Protective Service II – Emergency Medical Technician</b>	<b>GRADE/S: 10-12</b>
<b>UNIT 6: Medicine</b>	<b>TIMEFRAME:</b>

**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

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

eBook

Flashcards

Audiobook

Lecture Outline

Case Studies

Assessment in Action

Skills Drills ppp.

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

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 as, 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 server 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 boned that compose the wrist

**Cartilage**- the smooth connective tissues that dorm 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 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

**Cerebrovascular accident (CVA) also (Stroke)**- an interruption of blood flow to the brain that results in the loss of Brian 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 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

**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 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 box 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 a 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 releases 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 thar 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 parent ion 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**- inflation 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 temp 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 hearty 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 30 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 grow

**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 areas 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. Patients will be feverish and exhibit a "whoop" sound on inspiration after a coughing attack, highly contagious through droplet infection

Wallenpaupack Area School District Curriculum	
<b>COURSE: Protective Service II – Emergency Medical Technician</b>	<b>GRADE/S: 10-12</b>
<b>UNIT 7: Shock &amp; Resuscitation</b>	<b>TIMEFRAME:</b>

**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  
eBook  
Flashcards  
Audiobook  
Lecture Outline  
Case Studies

Assessment in Action

Skills Drills ppp.

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	
<b>COURSE: Protective Service II – Emergency Medical Technician</b>	<b>GRADE/S: 10-12</b>
<b>UNIT 8: Trauma</b>	<b>TIMEFRAME:</b>

<p><b>PA COMMON CORE/NATIONAL STANDARDS: National Highway Traffic and Safety Administration (NHTSA) Education Standards 2021.</b>  <b>NHTSA National Standard Curriculum 2021.</b>  <b>NHTSA Scope of Practice Model 2021.</b></p>
<p><b>UNIT OBJECTIVES (SWBATS):</b> Applies knowledge to provide basic emergency care and transportation based on assessment findings for an acutely injured patient.</p>
<p><b>INSTRUCTIONAL STRATEGIES/ACTIVITIES:</b> Didactic instruction flowed by skills laboratory.</p> <p><u>Didactic</u></p> <ul style="list-style-type: none"> <li>• Lecture presentation</li> <li>• Oral Discussion</li> </ul> <p><u>Laboratory</u></p> <ul style="list-style-type: none"> <li>• Skills Demonstration</li> <li>• Equipment demonstration <ul style="list-style-type: none"> <li>▪ Safety Review</li> </ul> </li> <li>• Scenarios</li> </ul>
<p><b>ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):</b>  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><b>DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):</b></p>
<p><b>RESOURCES (Technology Based Resources, Text Resources, etc.):</b>  Chapter Slides  eBook  Flashcards  Audiobook  Lecture Outline  Case Studies  Assessment in Action  Skills Drills ppp.</p>

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

Test Prep Simulator

**KEY VOCABULARY:**

**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 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

**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

**Commotio 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	
<b>COURSE: Protective Service II – Emergency Medical Technician</b>	<b>GRADE/S: 10-12</b>
<b>UNIT 9: Special Patient Populations</b>	<b>TIMEFRAME:</b>

**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 growth, development and aging and assessment findings to provide basic emergency care and transportation for a patient with special needs.

**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  
 eBook  
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 Audiobook  
 Lecture Outline  
 Case Studies  
 Assessment in Action

Skills Drills ppp.

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

Test Prep Simulator

**KEY VOCABULARY:**

**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 seizure 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 Gonorrhea

**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, with 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 covers 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 forcibly inflicted on another person, against the person's will.

**Respiratory 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 naval; 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 which 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	
<b>COURSE: Protective Service II – Emergency Medical Technician</b>	<b>GRADE/S: 10-12</b>
<b>UNIT 10: EMS Operations</b>	<b>TIMEFRAME:</b>

<p><b>PA COMMON CORE/NATIONAL STANDARDS: National Highway Traffic and Safety Administration (NHTSA) Education Standards 2021.</b>  <b>NHTSA National Standard Curriculum 2021.</b>  <b>NHTSA Scope of Practice Model 2021.</b></p>
<p><b>UNIT OBJECTIVES (SWBATS):</b> Knowledge of operational roles and responsibilities to ensure patient, public and personnel safety.</p>
<p><b>INSTRUCTIONAL STRATEGIES/ACTIVITIES:</b> Didactic instruction flowed by skills laboratory.</p> <p><u>Didactic</u></p> <ul style="list-style-type: none"> <li>• Lecture presentation</li> <li>• Oral Discussion</li> <li>• Cornell Notes</li> </ul> <p><u>Laboratory</u></p> <ul style="list-style-type: none"> <li>• Skills Demonstration</li> <li>• Equipment demonstration <ul style="list-style-type: none"> <li>▪ Safety Review</li> </ul> </li> <li>• Scenarios</li> </ul>
<p><b>ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):</b>  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><b>DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):</b></p>
<p><b>RESOURCES (Technology Based Resources, Text Resources, etc.):</b>  Chapter Slides  eBook  Flashcards  Audiobook  Lecture Outline  Case Studies  Assessment in Action  Skills Drills ppp.</p>

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

Test Prep Simulator

**KEY VOCABULARY:**

**Active shooter event**- an act of terror in which firearms are used in an ingoing 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 no 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 a accident release

**Carboys**- glass, plastic, or steel containers, ranging in volume from 5 to 15 gallons (19-57L)

**Casualty collection area**- an are set up by physicians, nurses, and others hospital staff neat a major disaster scene where pt 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

**Chorine (CL<sup>+</sup>)**- the first chemical agent ever used in warfare. It has a distinct odor of bleach and creates a green haze when released ad a gas. Initially it produces upper airway irritation and as 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 at a 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 might 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 and 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 is 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 the respiratory 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)**- a substance that is toxic, poisonous, radioactive, flammable, 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 loss 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 as 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 pt 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.

<b>Wallenpaupack Area School District Curriculum</b>	
<b>COURSE: Protective Service II – Emergency Medical Technician</b>	<b>GRADE/S: 10-12</b>
<b>UNIT 11: Clinical Behavior &amp; Judgement</b>	<b>TIMEFRAME:</b>

<p><b>PA COMMON CORE/NATIONAL STANDARDS: National Highway Traffic and Safety Administration (NHTSA) Education Standards 2021.</b>  <b>NHTSA National Standard Curriculum 2021.</b>  <b>NHTSA Scope of Practice Model 2021.</b></p>
<p><b>UNIT OBJECTIVES (SWBATS):</b> 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><b>INSTRUCTIONAL STRATEGIES/ACTIVITIES:</b> Hospital/Field experience</p> <ul style="list-style-type: none"> <li>▪ 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.</li> </ul>
<p><b>ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):</b>  Completion of patient care report (PCR) for each patient contact.  Clinical / Field Behavioral Evaluation</p>
<p><b>DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):</b></p>
<p><b>RESOURCES (Technology Based Resources, Text Resources, etc.):</b>  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><b>KEY VOCABULARY: ALL PREVIOUSLY LISTED VOCABULARY</b></p>