

# 09\_Diabetic Care, Temperature, Bites/Stings & Allergy Related 1st Aid Treatment

Content Area: **Science**  
Course(s):  
Time Period: **Full Year**  
Length: **3-4 weeks**  
Status: **Published**

## **General Overview, Course Description or Course Philosophy**

This course covers introductory information as it relates to the evaluation of individuals who have either critical medical conditions or sustained acute injuries, and their subsequent pre-hospital treatment. Students are minimally expected to have the knowledge and skills to perform basic life support and elementary treatment to stabilize a patient for transport to a hospital but not be proficient in utilizing complex life sustaining equipment. Students are expected to know first aid, understand when more experienced or sophisticated help is needed, and to prioritize the need for care. They also must do no harm. The first aid provider is not expected to offer the same level of care as a licensed EMT. This course offers 3 Rutgers University credit with the passing of the final exam.

## **OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS**

- Asthma: airway constriction along with chest tightness, shortness of breath, and/or wheezing noises on breathing
- Chronic obstructive pulmonary disease (COPD): a condition that makes it difficult to breathe. Typically, patients have difficulty with exhalation. Usually caused by obstructed airways due to copious amounts of mucus but also may occur due to loss of functioning alveoli as in emphysema
- Diabetes: Disease in which there is not enough insulin to remove glucose from the blood and increase utilization by cells. Type 1 disease is characterized by hyperglycemia secondary to the loss of beta cells in the pancreas which produces insulin. Without insulin, glucose taken in with food or produced in the liver builds up in the blood causing hyperglycemia. Type 2 Disease may result from diminished recognition of insulin (insulin resistance) and an increase in glucagon secretion. As type 2 disease progresses less insulin is produced and the patient will become increasingly reliant on exogenous insulin.
- Diabetic ketoacidosis: A condition in which an absence of insulin prevents glucose from entering cells. The cells then are forced to metabolize fats which produce ketones.

Ketones are highly acidic and toxic. If left untreated the patient will likely go into a diabetic coma.

- Hypoglycemia: diminished glucose in the blood which could lead to coma and death.
- Human Bites: True bite is when part of the body's flesh is caught between the teeth deliberately-may occur during child abuse. Clenched fist injury results from punching someone in the mouth. These bites tend to produce a high incidence of infection
- Snake bites: may result in burning pain at the bite site, puncture wounds, rapid swelling, blood-filled blisters, vomiting, difficulty breathing, sweating, and weakness. Dry bite refers to only tooth wound without venom injected
- Bull's eye rash: Rash with a red center that resembles a bull's eye as in a game of darts. indicates a tick bite
- Chilblain: a non-freezing cold injury that is painful but leaves no permanent damage
- Dehydration: loss of water from the tissues, poor turgor
- Frostbite: tissue damage from exposure to cold
- Gangrene: death of tissue
- Hypothermia: decreased body temperature
- Trench foot: a cold injury that develops when the skin on the feet is wet and exposed to cold for a prolonged time
- Vasoconstriction: constriction of arteries secondary to exposure to cold. However several drugs or medical conditions can also cause vasoconstriction

## **CONTENT AREA STANDARDS**

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VHEL.9-12.9.4.12.H.1	Demonstrate language arts knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
VHEL.9-12.9.4.12.H.3	Demonstrate science knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
VHEL.9-12.9.4.12.H.5	Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.
VHEL.9-12.9.4.12.H.62	Demonstrate knowledge of technical skills required for career pathways in this cluster, including occupational safety techniques, OSHA Standard Precautions, and safety procedures designed to protect clients, co-workers, and self.
VHEL.9-12.9.4.12.H.63	Demonstrate knowledge of technical skills required for career pathways in this cluster by obtaining related certificates, such as Cardiopulmonary Resuscitation (CPR) and First Aid.

## **RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)**

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LA.RH.11-12.3	Evaluate various perspectives for actions or events; determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.
LA.RH.11-12.4	Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a

	text (e.g., how Madison defines faction in Federalist No. 10).
LA.RH.11-12.8	Evaluate an author's claims, reasoning, and evidence by corroborating or challenging them with other sources.
LA.WHST.11-12.1.B	Develop claim(s) and counterclaims using sound reasoning and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.
LA.WHST.11-12.1.E	Provide a concluding paragraph or section that supports the argument presented.
TECH.9.4.12.CI	Creativity and Innovation
TECH.9.4.12.CT	Critical Thinking and Problem-solving

## **STUDENT LEARNING TARGETS**

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### **Declarative Knowledge**

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Students will understand that:

- Identify the common signs of an allergic reaction
- Identify and care for a victim suffering from asthma.
- Identify and care for someone who is hyperventilating.
- Identify and care for someone who has chronic obstructive pulmonary disease (COPD).
- Identify and care for a victim who has fainted or may faint.
- Identify and care for a victim who is having a seizure.
- Identify and care for someone who has a diabetic emergency.
- Identify and care for someone with abdominal pain.
- Identify and care for someone experiencing nausea and vomiting.
- Identify and care for someone with diarrhea.
- Identify and care for someone who is constipated.

### **Procedural Knowledge**

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Students will be able to:

- Demonstrate treatment for an allergic reaction
- Demonstrate treatment for asthma
- Demonstrate the treatment for diabetic shock and coma
- Demonstrate treatment for dehydration
- Demonstrate treatment for asthma
- Demonstrate the treatment for diabetic shock and coma

## **EVIDENCE OF LEARNING**

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### **Formative Assessments**

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- Worksheet
- Group activities
- Practicals

### **Summative Assessments**

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- Benchmarks – departmental benchmark given at the end of MP1, MP2, and MP3 based on lab practices
- Alternative Assessments
  - Lab inquiries and investigations
  - Lab Practicals
  - Exploratory activities based on phenomenon
  - Gallery walks of student work
  - Creative Extension Projects
  - Build a model of a proposed solution
  - Let students design their own flashcards to test each other

- Keynote presentations made by students on a topic
- Portfolio

## **RESOURCES (Instructional, Supplemental, Intervention Materials)**

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Textbook required by Rutgers University:

Advanced First Aid, CPR, and AED, Seventh Edition

Jones and Bartlett

ISBN-13: 978-1284105315

ISBN-10: 1284105318

- Nearpod
- Edpuzzle

## **INTERDISCIPLINARY CONNECTIONS**

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- Informative writing
- Ethics
- Data analysis

## **ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS**

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See link to Accommodations & Modifications document in course folder.