

14

POISONING

Duration 02 Periods (Lecture-02 Periods)

Preparation: Read reference material for additional information on treatments.

- Activated charcoal
- PowerPoint presentation
- Multimedia projector and screen
- Computer
- Flipcharts
- Handout

LESSON OBJECTIVES

Upon completion of this lesson, you will be able to:

1. List the signs and symptoms of poisoning, and steps for pre-hospital treatment.
2. List four specific signs and symptoms of ingested poisons.
3. List four specific signs and symptoms of inhaled poisons.
4. List four specific signs and symptoms of absorbed poisons.
5. List the signs and symptoms of injected poisons, including snakebites, and the steps for pre-hospital treatment.
6. List the signs and symptoms for alcohol abuse and the steps for pre-hospital treatment.

1. INTRODUCTION

- 1) Introduce the instructor and co-instructor.
- 2) Introduce the lesson.
- 3) Present lesson objectives.

Visual Aids
and Other
Materials

Time
Elapsed

► PPT 14-1
to 14-4

2. DEVELOPMENT

1

Poisons

Definition: Any substance that can impair or cause death of cell structure or function

► PPT 14-5

People are affected differently by the same dose of a poison. Some people may have developed a tolerance to a specific type of poison; however, even a small dose may be lethal to others.

A poison can enter the body four ways:

- Ingestion
- Inhalation
- Absorption
- Injection

► PPT 14-6

1

Poisons (Cont.)

Scene Assessment

Always perform a scene assessment – safety first. Protect yourself, your crew and others from the poison. Use universal precautions. Try to identify the source or substance involved. Get as much information as you can, as quickly as possible.

Perform the initial assessment and obtain the patient's history. Signs and symptoms of poisoning will vary depending on the type of poison.

<Ask participants about local poison control centres in their localities.>

General signs and symptoms of poisoning

- Nausea and/or vomiting
- Headache
- Abdominal pain
- Altered mental status or coma
- Seizures
- Rapid or slow heart rate
- High, normal or low blood pressure
- Possible dilation or constriction of pupils
- Shortness of breath
- Injury to skin (discoloration, burns, injection marks, swelling)
- Diarrhea

In an unexplained unconsciousness patient have a high index of suspicion for poisoning.

Visual Aids and Other Materials

Time Elapsed

► NOTE

► PPT 14-7

► PPT 14-8

► PPT 14-9

1

Poisons (Cont.)

Pre-hospital treatment for poisoning

Use universal precautions and secure the scene.

Use special protective equipment when necessary.

- 1) Move the patient away from the source of the poisoning, especially in inhalation and absorbed poisoning.
- 2) For absorbed poisons:
 - Remove the patient's *clothing*.
 - Blot the poison from the skin with a *dry cloth*. If the poison is a dry powder, brush it off.
 - Flood the affected area with copious amounts of *water* until EMS arrives.
- 3) Maintain *open airway*. Administer oxygen per local protocol.
- 4) Perform initial assessment. Do not perform *mouth to mouth ventilation* in inhaled or ingested poison cases. Use the BVM.
- 5) Call your local poison control centre, if available.
- 6) Perform physical exam.
- 7) For ingested poisons:
 - Do not give the patient anything (milk, water or activated charcoal) to dilute the poison unless advised to do so by a poison control center or emergency medical personnel because it may be harmful. Follow your local protocols and always call for medical direction before assisting a patient with medications.
 - Induced vomiting is contraindicated in poisoning with **hydrocarbons, strong acids, alkalis, and corrosives**.
 - In case of vomiting, position the patient to prevent aspiration. Save vomit for analysis.
- 8) Bring the suspected source, container, labels, or other evidence of the poison to the hospital.
- 9) Treat for shock.
- 10) Continually monitor the patient.

Transport the patient.

When available, provide first aid as advised in the container of the poison taken.

Visual Aids
and Other
Materials

Time
Elapsed

2

Ingested Poisons

An ingested poison is one that is introduced into the digestive tract by way of the mouth. In cases of ingested poison, all information should be obtained as quickly as possible while the initial assessment is performed. Look for signs of spilled liquids, tablets, capsules, poisonous substances or any container that can help you to identify the substance or source of poisoning. Signs and symptoms of ingested poisoning may be related to the digestive system.

Specific signs and symptoms of ingested poison

- Burns, swelling or stains around the mouth
- Abnormal breathing
- Diaphoresis
- Excessive salivation or foaming at the mouth

Visual Aids and Other Materials

Time Elapsed

► PPT 14-10

2

Ingested Poisons (Cont.)

Visual Aids
and Other
Materials

Time
Elapsed

Pre-hospital Care:

Airway control and adequate oxygenation are paramount in organophosphate (OP) poisonings. Intubation may be necessary in cases of respiratory distress due to laryngospasm, bronchospasm, bronchorrhea, or seizures.

- 1) Transfer the patient to a safe area, (away from exposure)
- 2) Remove all clothing and gently cleanse patients suspected of organophosphate exposure with soap and water because organophosphates are hydrolyzed readily in aqueous solutions with a high pH. Consider clothing hazardous waste and discard accordingly. Irrigate the eyes of patients who have had ocular exposure using isotonic sodium chloride solution or lactated Ringer's solution.
- 3) Administer oxygen if necessary.
- 4) Transfer to hospital immediately.

3

Inhaled Poisons

Poisoning caused by fumes and vapors can be swift. The body absorbs inhaled poisons very rapidly. The longer the exposure the worse the prognosis. You may need to use special masks to gain access to the patient in a hazardous environment. Additional expert help may be required. Signs and symptoms of ingested poisoning is more related to the respiratory system.

**Though it is important to give care immediately,
do not enter the scene unless you are sure it is safe.**

3

Inhaled Poisons (Cont.)

Scene Assessment

Assessment of inhaled poisons can be very dangerous. To ensure your safety, be wary of peculiar *odours* or visible *vapours*. If you are not properly equipped or trained, have trained personnel bring the patient to you. Do not enter the scene unless it is *safe*. Search for other victims. Try to get specific information on the poison and the patient's medical information as soon as possible.

It is important to obtain the patient's information or that of witnesses as soon as possible, to look for indications of inhaled poison.

► Carbon Monoxide Poisoning

Carbon monoxide poisoning occurs after the inhalation of carbon monoxide gas. Carbon monoxide (CO) is a product of combustion of organic matter under conditions of restricted oxygen supply, which prevents complete oxidation to carbon dioxide. Carbon monoxide is colorless, odorless, tasteless, and non-irritating, making it difficult for people to detect.

Carbon monoxide binds to hemoglobin (reducing oxygen transportation), myoglobin (decreasing its oxygen carrying capacity), and mitochondrial cytochrome oxidase (inhibiting cellular respiration).

Pre-hospital Treatment

- 1) First aid for carbon monoxide poisoning is to immediately remove the victim from the exposure without endangering oneself.
- 2) Call for help.
- 3) Apply CPR if needed.
- 4) The main medical treatment for carbon monoxide poisoning is 100% oxygen by a tight fitting oxygen mask. Oxygen hastens the dissociation of carbon monoxide from hemoglobin, improving tissue oxygenation by reducing its biological half-life.
- 5) Transport to hospital as soon as possible.

Visual Aids and Other Materials

Time Elapsed

3

Inhaled Poisons (Cont.)

Common inhaled poisons include

- Carbon monoxide
- Carbon dioxide from industrial sites, sewers, and wells
- Chlorine gas (common around swimming pools)
- Fumes from liquid chemicals and sprays
- Ammonia
- Sulphur dioxide (used to make ice)
- Anesthetic gases (ether, nitrous oxide, chloroform)
- Dry cleaning solvents, degreasing agents, or fire extinguishers
- Industrial gases
- Incomplete combustion of natural gas
- Hydrogen sulphide (sewer gas)

Visual Aids and Other Materials

Time Elapsed

Specific signs and symptoms of inhaled poison

► PPT 14-11

- History of inhalation abuse
- Chest pain or chest tightness
- Burning sensation in chest or throat
- Coughing, wheezing, or rales

4

Absorbed Poisons

An absorbed poison is one that enters the body through contact with the skin. Examples of natural sources include poison ivy, poison sumac and poison oak. Man-made sources include corrosives, insecticides, herbicides and cleaning agents. Signs and symptoms of absorbed poisons are more related to skin involvement.

<Ask participants to name some of the local types of absorbed poisons.>

► NOTE

Specific signs and symptoms of absorbed poisons

► PPT 14-12

- History of exposures
- Liquid or residue on the skin
- Itching or irritation
- Rash or blisters

5

Injected Poisons

Injection poisoning occurs when a poison enters the body through a break in the skin. The break can be caused by a needle (drugs), an insect bite or sting, or puncture.

Scene Assessment

During scene assessment, look for clues such as syringes and drug paraphernalia. Inspect surroundings for animals, insects or marine life. Conduct initial assessment, paying close attention to airway breathing. Monitor mental status and prioritize patients for transport. Obtain a focused history and perform a physical exam. Get information on the suspected poison or its origin. Try to find answers to the following questions:

- Is there a history of drug abuse?
- Any history of allergic reaction to bites or stings?
- How long from time of injection to onset of signs or symptoms?

Visual Aids and Other Materials**Time Elapsed**

► PPT 14-13

► PPT 14-14

Specific signs and symptoms of injected poisons

- *Needle tracks*
- Pain, swelling, or redness at the *injection site*
- History of *bites* or *stings*
- Bite mark or stinger embedded in the skin
- *Numbness* at the injury site after a few hours
- Other symptoms similar to ingested poisons

Pre-hospital treatment for injected poisons

Use universal precautions and secure the scene.

- 1) Maintain open airway.
- 2) Administer oxygen. Be alert for possible patient vomiting.
- 3) Protect yourself and the patient from repeated injections. Cut off patient's clothing to protect from possible repeated insect stings or bites.
- 4) For **bee stings**: remove the stinger together with the poison sac. Use a plastic card and scrape the skin's surface to keep the sac from breaking inside the patient's skin. Place a bag of ice or cold pack on the sting.
- 5) Bring all containers, labels, or other evidence of poisoning to the hospital.
- 6) Conduct a physical exam.
- 7) Treat for shock.
- 8) Continually monitor the patient during transport.

5

Injected Poisons (Cont.)

► Snake Bites

These are quite common in certain areas. Signs and symptoms may delay several hours before presenting. Death can occur quickly if the patient has an allergic reaction to the venom.

Treat all snakebites as poisonous.

**<Ask participants to identify local
poisonous snakes.>**

Visual Aids and Other Materials

Time Elapsed

► NOTE

► PPT 14-15

► PPT 14-16

Specific signs and symptoms for poisonous snake bites

- Nausea and vomiting
- Weakness, paralysis
- Seizures, decreased level of consciousness
- Puncture wound
- Pain and/or burning sensation around the bite mark
- Blood oozing from the bite mark
- Discoloration and swelling

5

Injected Poisons (Cont.)

Visual Aids
and Other
Materials

Time
Elapsed

Pre-hospital treatment for snake bites

Use universal precautions and secure the scene.

- 1) Ensure the scene is safe for you and the patient.
- 2) Calm the patient and try to place him/her in a comfortable position.
- 3) Locate the bite marks and clean them with water and soap.
- 4) Remove rings, bracelets and any restrictive garments from the affected extremity. **Do not apply** *tourniquets* (constricting band is recommended), **do not make** *incisions* around the bite marks, and **do not** *suction* the venom from the wound.
- 5) Treat for shock and provide basic life support as needed.
- 6) Do not give the patient any food or drink.
- 7) Identify the snake.
- 8) Administer oxygen if needed.
- 9) Continually monitor the patient during transport.

**Only anti-venin works as an antidote
for a poisonous snake bite.**

Anti-venin serum must be administered on the basis of three criteria:

- Specificity (appropriate to the snake species)
- Appropriate quantity
- Within the shortest possible time

► PPT 14-17

6

Alcohol Abuse

Abuse of this drug leads to alcoholism and serious chronic intoxication with great physical and mental deterioration. A patient under the influence of alcohol can be dangerous to him/herself and to others.

If the patient allows it, conduct an initial assessment and physical exam including an interview; the assistance of friends and witnesses can be very helpful.

Specific signs and symptoms of alcohol abuse/poisoning

- *Smell of alcohol* on the breath and/or clothes.
- *Staggering*
- *Slurred speech*
- *Nausea and vomiting*
- *Redness of the face*
- *Altered behaviour*

Visual Aids and Other Materials

Time Elapsed

► PPT 14-18

Pre-hospital treatment for alcohol abuse

Use universal precautions and secure the scene. Persons with alcohol poisoning can injure others or themselves.

- 1) Verify whether it is strictly a case of alcohol abuse (determine if patient is diabetic).
- 2) Allow EMS decide if police intervention is required.
- 3) Monitor vital signs and stay alert for breathing problems. Be alert for vomiting and take steps to prevent aspiration.
- 4) Protect the patient from injury without using restrictive means.
- 5) Give oxygen if needed.

Transport the patient.

Signs and symptoms of Alcohol Withdrawal (Delirium Tremens)

- *Confusion and restlessness*
- *Altered behaviour*
- *Hallucinations*
- *Trembling hands*
- *Spasms or convulsions*

REVIEW

**<Review objectives on page 1 to ensure participants have understood them clearly.
Answer questions from participants.>**

**Visual Aids
and Other
Materials**

**Time
Elapsed**

EVALUATION

1. Fill out the evaluation form.
1. Confirm the successful achievement of lesson objectives.

CLOSE

1. Explanations, comments, suggestions
2. Thank the participants and announce the next lesson.

— INSTRUCTOR'S COPY

POST-TEST | LESSON 14

Poisoning

1. List the signs and symptoms of **poisoning**, and the steps for pre-hospital treatment.

Signs and symptoms

- *Nausea and/or vomiting*
- *Headache*
- *Abdominal pain*
- *Altered mental status (from disorientation to unresponsiveness)*
- *Seizures*
- *Rapid or slow heart rate*
- *High, normal or low blood pressure*
- *Possible dilation or constriction of pupils*
- *Shortness of breath*
- *Injury to skin (discoloration, burns, injection marks, swelling)*
- *Diarrhea*

Pre-hospital treatment

- 1) *Move the patient away from the source of the poisoning, especially in inhalation and absorbed poisoning.*
- 2) *For absorbed poisons:*
 - *Remove the patient's clothing*
 - *Blot the poison from the skin with a dry cloth. If the poison is a dry powder, brush it off.*
 - *Flood the affected area with copious amounts of water until EMS arrives.*
- 3) *Maintain open airway. Administer oxygen per local protocol.*
- 4) *Perform initial assessment. Do not perform mouth to mouth ventilation in inhaled poisoning cases. Use the BVM.*
- 5) *Call your local poison control centre, if available.*
- 6) *Perform physical exam.*
- 7) *For ingested poisons:*
 - *Do not administer anything by mouth.*
 - *Induced vomiting is contraindicated in poisoning with **hydrocarbons, strong acids, alkalis, and corrosives**.*
 - *In case of vomiting, position the patient so that no vomit will be aspirated. Put him on one side or in sitting position with the head turned to the side.*
- 8) *Bring the suspected source; container, labels, or other evidence of the poison to the hospital.*
- 9) *Treat for shock.*
- 10) *Continually monitor the patient.*

POST-TEST | LESSON 14

Poisoning (Cont.)

2. List four specific signs and symptoms of ingested poisons.

- *Burns, swelling or stains around the mouth*
- *Abnormal breathing*
- *Diaphoresis*
- *Excessive salivation or foaming from the mouth*

3. List four specific signs and symptoms of inhaled poisons.

- *History of inhalation abuse*
- *Chest pain or chest tightness*
- *Burning sensation in chest or throat*
- *Cough, wheezing, or rales*

4. List four specific signs and symptoms of absorbed poisons.

- *History of exposures*
- *Liquid or residue on the skin*
- *Itching or irritation*
- *Rash or blisters*

— INSTRUCTOR'S COPY

POST-TEST | LESSON 14

Poisoning (Cont.)

5. List the signs and symptoms of injected poisons, including snakebites, and the steps for pre-hospital treatment.

Signs and symptoms

- *Needle tracks*
- *Pain, swelling, or redness at the injection site*
- *History of bites or stings*
- *Bite mark or stinger embedded in the skin*
- *Numbness at the injury site after a few hours*

Pre-hospital treatment

- 1) *Move the patient to a safe place.*
- 2) *Calm the patient and try to place him/her in a comfortable position.*
- 3) *Locate the bite marks and clean them with water and soap.*
- 4) *Remove rings, bracelets and any restrictive garments from the affected extremity. Do not apply tourniquets (constricting band is recommended), do not make incisions around the bite marks, and do not suction the venom from the wound.*
- 5) *Treat for shock and provide basic life support as needed.*
- 6) *Do not give the patient any food or drink.*
- 7) *If possible, capture the snake for species identification.*
- 8) *Administer oxygen per local protocol.*
- 9) *Continually monitor the patient during transport.*

— INSTRUCTOR'S COPY

POST-TEST | LESSON 14**Poisoning (Cont.)**

6. List at least four signs and symptoms for alcohol abuse and list three steps for pre-hospital treatment.

Signs and symptoms

- The smell of alcohol on the breath; it can also be on the patient's clothes. If the patient is diabetic, and especially if decompensated, may present with a fruity or acetone smell on the breath, dizziness, vomiting and altered mental status.
- Staggering
- Slurred speech
- Nausea and vomiting
- Redness of the face
- Altered behaviour

Pre-hospital treatment

- 1) Verify whether it is strictly a case of alcohol abuse (determine if diabetic).
- 2) Per local protocol, allow EMS decide if police intervention is required.
- 3) Monitor vital signs and stay alert for breathing problems.
- 4) Protect the patient from injury without using restrictive means.
- 5) Give oxygen per local protocol.
- 6) Transport the patient.

LESSON 14
— **PPT's****14-1****14-2****OBJECTIVES**

Upon completing this lesson, you will be able to:

- 1 List the signs and symptoms of poisoning, and steps for pre-hospital treatment.
- 2 List four specific signs and symptoms of ingested poisons.

14-3

OBJECTIVES

Upon completing this lesson,
you will be able to:

- 3 List four specific signs and symptoms of inhaled poisons.
- 4 List four specific signs and symptoms of absorbed poisons.
- 5 List the signs and symptoms of injected poisons, including snakebites, and the steps for pre-hospital treatment.

PEER | MFR | INDIA

14-4

OBJECTIVES

Upon completing this lesson,
you will be able to:

- 6 List the signs and symptoms for alcohol abuse and the steps for pre-hospital treatment.
- 7 List the signs and symptoms for drug abuse and the steps for pre-hospital treatment.

PPT 14 - 4

14-5

POISON



PEER | MFR | INDIA

Any substance that can impair or cause death of cell structure or function.

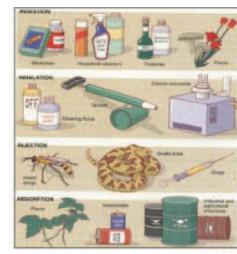
PPT 14 - 5

14-6

POISONS

Can enter the body in four ways:

- Ingestion
- Inhalation
- Injection
- Absorption



PPT 14 - 6

LESSON 14

— PPT's

14-7

POISONING

General signs and symptoms

- Nausea and/or vomiting
- Headache
- Abdominal pain
- Altered mental status or coma

PPT 14-7

14-8

POISONING

General signs and symptoms

CONT

- Seizures
- Rapid or slow heart rate
- High, normal or low blood pressure
- Possible dilation or constriction of pupils

PPT 14-8

14-9

POISONING

General signs and symptoms

CONT

- Shortness of breath
- Injury to skin (discoloration, burns, injection marks, swelling)
- Diarrhea

PPT 14-9

14-10

INGESTED POISONS

Specific signs and symptoms

- Burns, swelling or stains around the mouth
- Abnormal breathing
- Diaphoresis
- Excessive salivation or foaming at the mouth

PPT 14-10

14-11

INHALED POISONS

Specific signs and symptoms

- History of inhalation abuse
- Chest pain or tightness
- Burning sensation in the chest or throat
- Coughing, wheezing or rales

PPT 14-11

14-12

ABSORBED POISONS

Specific signs and symptoms

- History of exposures
- Liquid or residue on the skin
- Itching or irritation
- Rash or blisters

PPT 14-12

LESSON 14

— PPT's

14-13

INJECTED POISONS

Specific signs and symptoms

- Needle tracks
- Pain, swelling or redness at the injection site
- History of bites or stings

PEER | MFR | INDIA

14-14

INJECTED POISONS

Specific signs and symptoms

CONT

- Bite marks or embedded stinger
- Numbness at the injury site
- Other symptoms similar to ingested poisons

PPT 14-14

14-15

SNAKE BITES

Specific signs and symptoms

- Nausea and vomiting
- Weakness and paralysis
- Seizures or decreased level of consciousness

PEER | MFR | INDIA

14-16

SNAKE BITES

Specific signs and symptoms

CONT

- Puncture wound
- Pain and/or burning sensation around bite mark
- Blood oozing from the bite mark
- Discoloration and swelling

PPT 14-16

14-17

CRITERIA FOR ADMINISTERING ANTI-VENIN

- Specificity (appropriate to the snake species)
- Appropriate quantity
- Within the shortest possible time

PEER | MFR | INDIA

14-18

ALCOHOL ABUSE / POISONING

Specific signs and symptoms

- Smell of alcohol on breath/clothes
- Staggering
- Slurred speech
- Nausea and vomiting
- Redness of the face
- Altered behaviour

PPT 14-18

15

MEDICAL EMERGENCIES,

PART 1: CARDIOVASCULAR EMERGENCIES AND ABDOMINAL DISTRESS

Duration

- 02 Periods
- (Lecture-02 Periods)

- Powerpoint presentation
- Computer

Materials:

- Multimedia projector and screen
- Flipcharts
- Handout

LESSON OBJECTIVES

Upon completion of this lesson, you will be able to:

1. Define a medical emergency.
2. Define angina pectoris, list six signs and symptoms, and describe pre-hospital treatment.
3. Define myocardial infarction, list nine signs and symptoms, and list eight steps for pre-hospital treatment.
4. Define congestive heart failure, list eight signs and symptoms, and four steps for pre-hospital treatment.
5. Define hypertension, list five signs and symptoms and five steps for pre-hospital treatment.
6. List ten signs and symptoms of abdominal distress and list five steps for pre-hospital treatment

	Visual Aids and Other Materials	Time Elapsed
1. INTRODUCTION	<ul style="list-style-type: none"> 1) Introduce the instructor and co-instructor. 2) Introduce the lesson. 3) Present lesson objectives. 	<p>► <i>PPT 15-1 to 15-4</i></p>
2. DEVELOPMENT	<p><Request the participants to define a medical emergency.></p> <p>1</p> <p>Medical Emergency</p> <p>Definition: A critical state caused by a wide variety of illnesses whose cause does not include trauma to the patient.</p> <p>Such a state can be caused by germ pathogens (microorganisms), alteration in the functioning of organ, or foreign substances, such as poisons. In most cases, the problem is not a consequence of trauma.</p> <p>If the patient presents with a typical vital signs, assume that the patient has a medical emergency.</p>	<p>► <i>NOTE</i></p> <p>► <i>PPT 15-5</i></p>

1

Medical Emergency (Cont.)

The most common cardiovascular medical emergencies are:

- Myocardial infarction (heart attack)
- Angina pectoris
- Congestive heart failure
- Hypertension

Visual Aids and Other Materials

► PPT 15-6

Time Elapsed

1.1 Detection

- Medical emergencies can create a situation leading to trauma and may remain unnoticed. Example: A person that has a myocardial infarction can lose consciousness and fall, suffering a traumatic injury. Always consider the possibility that an underlying medical emergency may have lead to the traumatic event.
- Trauma can induce a medical emergency. Example: the stress of an accident can produce a myocardial infarction, cerebral vascular accident or a seizure. Conduct an initial assessment and physical exam and continue monitoring the patient closely.

1.2 Signs of a Medical Emergency

If the patient presents with *atypical* vital signs, assume that the patient has a medical emergency. Changes in any of the following can indicate a medical emergency:

- Mental status (unconscious, confused, comatose)
- Heart rate, rhythm and/or quality
- Breathing rate, rhythm, and/or quality
- Skin temperature, colour and/or condition
- Pupil size, symmetry, and reactivity to light
- Condition and colour of the mucous membranes (dryness, paleness, cyanosis)
- Breath scent (alcohol, acetone)
- Muscular activities (spasms and paralysis)
- Vomiting

► FC 15-1

► FC 15-2

► FC 15-3

In an adult patient, the following conditions may indicate a possible medical emergency:

- Heart rate above 100 or less than 60 bpm.
- Respiratory rate less than 12 or more than 20 rpm.

1

Medical Emergency (Cont.)

1.3 Symptoms of a Medical Emergency

Consider all patients' complaints as valid.

If the patient complains of not feeling well, assume that he/she is having a medical emergency.

- Pain
- Fever
- Stomach discomfort, nausea, atypical bowel or bladder activity
- Vertigo, fainting sensation, feeling of impending doom
- Shortness of breath or difficulty breathing
- Chest or abdominal pain
- Excessive thirst, hunger or strange taste in the mouth
- Sensation of numbness and/or tingling

Visual Aids and Other Materials

Time Elapsed

► FC 15-4

► FC 15-5

► FC 15-6

1.4 Causes of Heart Diseases

- The heart is a muscle that is oxygenated by the coronary arteries.
- **Arteriosclerosis** is a progressive narrowing of the arteries, in which deposits of fat attach to the internal walls of the arteries, reducing their diameter.
- When the coronary arteries are narrowed, the amount of oxygen supplied to the muscle is reduced and the patient experiences chest pain. This pain is called **angina pectoris**.
- When the coronary arteries are obstructed, oxygen cannot reach the muscle. This part of the muscle then dies, causing a condition called a **myocardial infarction**. It is the consequence of an occlusion of one or several of the coronary arteries.
- If the patient loses too much of the heart muscle, the heart will be unable to pump enough blood to supply the rest of the body. This leads to shock and soon after, death.

NOTE:- • Arteriosclerosis refers to the general stiffening and thickening of artery walls, which can occur due to various factors, including aging and high blood pressure.

• **Atherosclerosis** is a specific type of arteriosclerosis where plaques of fat, cholesterol, and other substances build up inside the arteries, leading to reduced blood flow.

2

Cardiovascular Emergencies

2.1 Angina Pectoris

Definition: Chest pain.

Visual Aids
and Other
Materials

Time
Elapsed

► PPT 15-7

This condition is the result of reduced oxygen supply to the heart muscle (myocardium). It can be caused by diseased or narrowed arteries which reduce blood flow. Angina is often brought on by exertion or stress, and rarely lasts longer than 3 to 5 minutes.

Signs and symptoms of angina pectoris

- Chest pain
- Shortness of breath
- Profuse sweating
- Light-headedness
- Palpitations (sensation of throbbing or fluttering of the heart)
- Nausea, vomiting
- Pale, cool, moist skin

It is impossible to distinguish between angina and the pain of a heart attack. Though it does not cause permanent damage to the heart, angina can eventually lead to a heart attack.

Pre-hospital treatment for angina pectoris

Pre-hospital treatment is the same as for myocardial infarction.

2.2 Myocardial Infarction

Definition: Literally meaning “death of the heart,” caused by partial or total blockage of blood flow to the heart, leading to death of cardiac muscle tissue.

► PPT 15-8

Myocardial infarction is commonly known as “heart attack”.

► FC 15-7

Signs and symptoms of Myocardial Infarction

- Chest discomfort, such as pain or heaviness. The common location is substernal, radiating to the neck, jaw, left shoulder and/or left arm, rarely to abdomen.
- Abnormal pulse
- Nausea or vomiting
- Shortness of breath
- Difficulty breathing or rapid, shallow respirations
- Sudden weakness
- Anxiety
- Syncope (fainting)
- Profuse sweating

► FC 15-8

If any of the above signs or symptoms is present, assume that the patient is having or will soon have a myocardial infarction.

Pre-hospital treatment for Myocardial Infarction

Use universal precautions and secure the scene.

- 1) Instruct the patient to stop all movement.
- 2) Place the responsive patient in a comfortable position, usually semi-reclining or sitting.
- 3) Maintain open airway.
- 4) Administer oxygen. If needed, provide artificial ventilation or CPR.
- 5) Loosen restrictive clothing.
- 6) Maintain body temperature as close to normal as possible.
- 7) Comfort and reassure the patient.
- 8) Constantly monitor the patient's vital signs.

2

Cardiovascular Emergencies (Cont.)

2.3 Congestive Heart Failure

Definition: A condition of excessive fluid build-up in the lungs and/or other organs due to inadequate pumping of the heart.

Visual Aids and Other Materials

► PPT 15-9

This condition is called “congestive” because the fluids congest, or clog, the organs. Congestive heart failure is often a complication of myocardial infarction, and can also be brought on by diseased heart valves, hypertension and pulmonary diseases such as emphysema.

Signs and symptoms of congestive heart failure

- Shortness of breath, made worse by lying flat
- Rapid heart rate
- Anxiety
- Increased respiratory rate
- Normal to high blood pressure
- Jugular vein distension
- Swollen ankles
- Cyanosis

► PPT 15-10

► PPT 15-11

The patient with congestive heart failure may not always experience chest pain.

Pre-hospital treatment for congestive heart failure

Use universal precautions and secure the scene.

- 1) Maintain open airway and monitor breathing.
Provide artificial ventilation if needed.
- 2) Place the responsive patient in a comfortable position, usually sitting upright.
- 3) Give oxygen if needed.
- 4) Continuously monitor the patient and provide emotional support.

Transport the patient as soon as possible.

Time Elapsed

2

Cardiovascular Emergencies (Cont.)

2.5 Hypertension

Definition: Blood pressure that remains consistently above the normal values.

Visual Aids
and Other
Materials

Time
Elapsed

► PPT 15-12

Signs and symptoms of hypertension

- Headache
- Feeling of sickness
- Anxiety
- Ringing in the ears
- Seeing “stars”
- Nosebleed (epistaxis)
- Diastolic blood pressure above 90 mmHg.
- Tingling in *face or extremities*

► PPT 15-13

► PPT 15-14

Pre-hospital treatment for hypertension

Use universal precautions and secure the scene.

- 1) Maintain open airway.
- 2) Place the responsive patient in a comfortable position, usually sitting upright.
- 3) Provide emotional support.
- 4) Control nosebleed, if present.

Transport the patient as soon as available.

3 Abdominal Distress

Definition:
Sharp, severe abdominal pain.

Visual Aids and Other Materials

► PPT 15-15

Abdominal pain can have sudden onset or build up gradually over a period of time. Severe abdominal pain may not always reflect a serious condition, but must always be treated as serious by the MFR until a full diagnosis is made by a doctor.

<Review organs/anatomy of the abdomen.
Refer to hollow and solid organs (Lesson 5).>

► NOTE

Causes of abdominal distress

There are multiple causes of abdominal pain, all requiring immediate attention. These disorders have four general causes: inflammation, infection, obstruction and haemorrhage. These conditions can be brought on by, but are not limited to, the following:

- Acute appendicitis
- Perforated ulcer
- Intestinal obstruction
- Ectopic pregnancy or other gynecological emergencies
- Closed abdominal trauma (ruptures, haemorrhages)

► PPT 15-16

► PPT 15-17

The above list does not include all causes of abdominal pain.

Signs and symptoms of abdominal distress

- Abdominal pain, local or diffuse.
- Colicky pain (cramps that occur in waves)
- Abdominal tenderness, local or diffuse.
- Anxiety, reluctance to move
- Loss of appetite, nausea, vomiting
- Fever
- Rigid, tense, or distended abdomen
- Signs of shock
- Vomiting blood bright red or dark brown, resembling coffee grounds
- Blood in stool, bright red or tarry black

► PPT 15-18

► PPT 15-19

► PPT 15-20

Many times a patient with abdominal pain will be found in a **guarding position**.

Time Elapsed

3**Abdominal Distress (Cont.)****Visual Aids
and Other
Materials****Time
Elapsed****Pre-hospital treatment of abdominal distress**

Use universal precautions and secure the scene.

- 1) Maintain open airway and prevent aspiration of vomit.
Have patient lie in comfortable position, preferably the left side if nauseated.
- 2) Administer oxygen per local protocol.
- 3) Treat for shock.
- 4) Do not give anything by mouth.
- 5) Keep a vomit sample for analysis (take precautions to prevent contamination).
- 6) Continually monitor vital signs while transporting the patient.

Visual Aids and Other Materials	Time Elapsed
---------------------------------	--------------

REVIEW

Review objectives from page 1 and ensure everyone has understood them clearly. Answer any questions on lesson content.

EVALUATION

- 1) Verify that the objectives have been achieved.
- 2) Fill out evaluation form.

CLOSE

1. Explanations, comments, suggestions
2. Thank the participants and announce the next lesson.

— INSTRUCTOR'S COPY

POST-TEST | LESSON 15

Medical Emergencies, Part 1:

Cardiovascular Emergencies and Abdominal Distress

1. Define a medical emergency.

A critical state caused by a wide variety of illnesses whose cause does not include trauma to the patient.

2. Define myocardial infarction, list nine signs and symptoms, and list eight steps for pre-hospital treatment.

Definition Literally meaning “death of the heart”, when blood to part of the heart is blocked off or greatly reduced, that part dies.

Signs and symptoms

- *Chest discomfort, such as pain or heaviness. The common location is sub sternal, radiating to the neck, jaw, left shoulder and/or left arm.*
- *Abnormal pulse*
- *Nausea or vomiting*
- *Shortness of breath*
- *Difficulty breathing or rapid, shallow respirations*
- *Sudden onset of weakness*
- *Anxiety*
- *Syncope (fainting)*
- *Profuse sweating without a clear cause*

Pre-hospital treatment

- 1) *Instruct the patient to stop all movement.*
- 2) *Place the responsive patient in a comfortable position, usually semi-reclining or sitting.*
- 3) *Maintain open airway.*
- 4) *Administer oxygen per local protocol. If needed, provide artificial ventilation or CPR.*
- 5) *Loosen restrictive clothing.*
- 6) *Maintain body temperature as close to normal as possible.*
- 7) *Comfort and reassure the patient.*
- 8) *Constantly monitor the patient's vital signs.*

— INSTRUCTOR'S COPY

POST-TEST | LESSON 15

Medical Emergencies, Part 1:

Cardiovascular Emergencies and Abdominal Distress (Cont.)

3. Define angina pectoris, list six signs and symptoms, and describe pre-hospital treatment.

Definition

Pain in the chest.

Signs and symptoms

- *Shortness of breath*
- *Profuse sweating*
- *Light-headedness*
- *Palpitations (sensation of throbbing or fluttering of the heart)*
- *Nausea, vomiting*
- *Pale, cool, moist skin*

Pre-hospital treatment

The same as for myocardial infarction.

4. Define congestive heart failure, list eight signs and symptoms, and list four steps for pre-hospital treatment.

Definition

A condition of excessive fluid build-up in the lungs and/or other organs due to inadequate pumping of the heart.

Signs and symptoms

- *Shortness of breath, made worse by lying flat*
- *Rapid heart rate*
- *Anxiety*
- *Increased respiratory rate*
- *Normal to high blood pressure*
- *Jugular vein distension*
- *Swollen ankles*
- *Cyanosis*

Pre-hospital treatment for congestive heart failure

- 1) *Maintain open airway and monitor breathing. Provide artificial ventilation if needed.*
- 2) *Place the responsive patient in a comfortable position, usually sitting upright.*
- 3) *Give oxygen per local protocol.*
- 4) *Continuously monitor the patient and provide emotional support.*

— INSTRUCTOR'S COPY

POST-TEST | LESSON 15

Medical Emergencies, Part 1:

Cardiovascular Emergencies and Abdominal Distress (Cont.)

5. Define hypertension, list five signs and symptoms and list five steps for pre-hospital treatment.

Definition

Blood pressure that remains constantly above the normal values.

Signs and symptoms

- *Migraine headache*
- *Sickness*
- *Anxiety*
- *Ringing in the ears*
- *“Seeing stars”*
- *Nosebleed (epistaxis)*
- *Diastolic blood pressure above 90 mmHg.*
- *Tingling in the face or extremities*

Pre-hospital treatment for hypertension

- 1) *Maintain open airway.*
- 2) *Place the responsive patient in a comfortable position, usually sitting upright.*
- 3) *Provide emotional support.*
- 4) *Control nosebleed, if present.*
- 5) *Transport the patient.*

— INSTRUCTOR'S COPY

POST-TEST | LESSON 15

Medical Emergencies, Part 1:

Cardiovascular Emergencies and Abdominal Distress (Cont.)

6. List ten signs and symptoms for abdominal distress and list five steps for pre-hospital treatment.

Signs and symptoms

- *Abdominal pain, local or diffuse.*
- *Colicky pain (cramps that occur in waves).*
- *Abdominal tenderness, local or diffuse.*
- *Anxiety, reluctance to move.*
- *Loss of appetite, nausea, vomiting.*
- *Fever.*
- *Rigid, tense, or distended abdomen.*
- *Signs of shock.*
- *Vomiting blood, bright red or like coffee grounds.*
- *Blood in stool, bright red or tarry black.*

Pre-hospital treatment

- 1) *Maintain open airway and prevent aspiration of vomit. Have patient lie in comfortable position, preferably the left side if nauseated.*
- 2) *Administer oxygen per local protocol.*
- 3) *Treat for shock.*
- 4) *Do not give anything by mouth.*
- 5) *Keep a vomit sample for analysis (take precautions to prevent contamination).*

LESSON 15

— PPT's

15-1



15-2

OBJECTIVES

Upon completing this lesson, you will be able to:

- 1 Define a medical emergency.
- 2 Define myocardial infarction, list nine signs and symptoms, and list eight steps for pre-hospital treatment.

PPT 15 - 2

15-3

OBJECTIVES

Upon completing this lesson, you will become familiar with:

- 3 Define angina pectoris, list six signs and symptoms, and describe pre-hospital treatment.
- 4 Define congestive heart failure, list eight signs and symptoms, and four steps for pre-hospital treatment.

PPT 15 - 3

15-4

OBJECTIVES

Upon completing this lesson, you will become familiar with:

- 5 Define hypertension, list five signs and symptoms and five steps for pre-hospital treatment.
- 6 List ten signs and symptoms of abdominal pain and list five steps for pre-hospital treatment.

PPT 15 - 4

15-5

MEDICAL EMERGENCY

A critical state caused by a wide variety of illnesses whose cause does not include trauma to the patient.

PPT 15 - 5

15-6

MOST COMMON CARDIOVASCULAR MEDICAL EMERGENCIES

- Myocardial infarction
- Angina pectoris
- Congestive heart failure
- Cerebral vascular accident
- Hypertension

PPT 15 - 6

LESSON 15

— PPT's

15-7

MYOCARDIAL INFARCTION

Literally meaning "death of the heart," when blood to part of the heart is blocked off or greatly reduced, that part dies.

PEER | MFR | INDIA

15-8

ANGINA PECTORIS

Chest pain

PEER | MFR | INDIA

PPT 15-8

15-9

CONGESTIVE HEART FAILURE

A condition of excessive fluid build-up in the lungs and/or other organs due to inadequate pumping of the heart.

PEER | MFR | INDIA

15-10

CONGESTIVE HEART FAILURE

Signs and symptoms

- Shortness of breath, made worse by lying flat
- Rapid heart rate
- Anxiety
- Increased respiratory rate

PEER | MFR | INDIA

PPT 15-10

15-11

CONGESTIVE HEART FAILURE

Signs and symptoms (CONT.)

- Normal to high blood pressure
- Jugular vein distension
- Swollen ankles
- Cyanosis

PEER | MFR | INDIA

15-12

HYPERTENSION

Blood pressure that remains consistently above the normal values.

PEER | MFR | INDIA

PPT 15-12

LESSON 15

— PPT's

15-13

HYPERTENSION

Signs and symptoms

- Headache
- Feeling of sickness
- Anxiety
- Ringing of the ears

PEER | MFR | INDIA

15-14

HYPERTENSION

Signs and symptoms CONT.

- "Seeing stars"
- Nosebleed
- Diastolic blood pressure above 90 mmHg.
- Tingling in the face or extremities

PPT 15-14

15-15

ABDOMINAL DISTRESS

Sharp, severe abdominal pain.

PPT 15-15

PEER | MFR | INDIA

15-16

CAUSES OF ABDOMINAL DISTRESS

- Acute appendicitis
- Perforated ulcer
- Intestinal obstruction

PPT 15-16

15-17

CAUSES OF ABDOMINAL DISTRESS

CONT.

- Ectopic pregnancy or other gynaecological emergencies
- Closed abdominal trauma (ruptures, haemorrhages)

PEER | MFR | INDIA

PPT 15-17

15-18

ABDOMINAL DISTRESS

Signs and symptoms

- Abdominal pain, local or diffuse
- Colicky pain (cramps that occur in waves)
- Abdominal tenderness, local or diffuse

PPT 15-18

LESSON 15

— PPT's

15-19

ABDOMINAL DISTRESS

Signs and symptoms CONT.

- Anxiety, reluctance to move
- Loss of appetite, nausea, vomiting
- Fever
- Rigid, tense, or distended abdomen

PEER | MHR | INDIA

15-20

ABDOMINAL DISTRESS

Signs and symptoms CONT.

- Signs of shock
- Vomiting blood, bright red or dark brown, resembling coffee grounds
- Blood in stool, bright red or tarry black

PPT 15-20

LESSON 15

— FLIP CHARTS

FC15-1



MEDICAL EMERGENCY SIGNS

Changes in:

- Mental status
- Heart rate, rhythm and/or quality
- Breathing rate, rhythm, and/or quality

FC15-2



« continued

MEDICAL EMERGENCY SIGNS

Changes in:

- Skin temperature,
- Pupil size, symmetry
- Condition and colour of mucous membranes

PEER | MFR | INDIA

More ▶
FC 15-1

PEER | MFR | INDIA

More ▶
FC 15-2

FC15-3



MEDICAL EMERGENCY SIGNS

Changes in:

- Breath scent
- Muscular activity
- Vomiting

FC15-4



MEDICAL EMERGENCY SYMPTOMS

- Pain
- Fever
- Stomach discomfort, nausea, atypical bowel or bladder activity

PEER | MFR | INDIA

FC 15-3

PEER | MFR | INDIA

More ▶
FC 15-4

LESSON 15

— FLIP CHARTS

FC15-5



• continued

MEDICAL EMERGENCY SYMPTOMS

- Vertigo, fainting sensation, feeling of impending doom
- Shortness of breath or difficulty breathing
- Chest or abdominal pain

FC15-6



• continued

MEDICAL EMERGENCY SYMPTOMS

- Excessive thirst, hunger or strange taste in the mouth
- Sensation of numbness

FC15-7



MYOCARDIAL INFARCTION

Signs and symptoms

- Discomfort in the chest
- Abnormal pulse
- Nausea or vomiting
- Shortness of breath
- Difficulty breathing

FC15-8



• continued

MYOCARDIAL INFARCTION

Signs and symptoms

- Sudden weakness
- Anxiety
- Fainting
- Profuse sweating

16

MEDICAL EMERGENCIES, PART 2: RESPIRATORY EMERGENCIES

Duration

- 02 Periods • (Lecture-02 Periods)

Equipment /

- Flipcharts

Materials:

- Multimedia projector and screen
- Computer

LESSON OBJECTIVES

Upon completion of this lesson, you will be able to:

1. Define respiratory distress.
2. List four causes of respiratory distress.
3. List seven signs and symptoms of respiratory distress.
4. List five steps for pre-hospital treatment of respiratory distress.
5. List eight signs and symptoms of toxic product inhalation.
6. List five steps for pre-hospital treatment of toxic product inhalation.

	Visual Aids and Other Materials	Time Elapsed
<h2>1. INTRODUCTION</h2> <ul style="list-style-type: none"> 1) Introduce instructors and co-instructor. 2) Introduce the lesson. 3) Present lesson objectives. 	<p>► PPT 16-1 to 16-3</p>	
<h2>2. DEVELOPMENT</h2> <p>1</p> <h3>Respiratory Distress</h3> <p>Definition: Shortness of breath or a feeling of air hunger with laboured breathing.</p> <p>Respiratory distress affects one's ability to exchange oxygen and carbon dioxide. Respiratory medical emergencies have common signs and symptoms inherent to all types of breathing difficulties. Respiratory distress is characterized by quick, laboured breathing, shortness of breath and the sensation of unavailable air. It can produce a blue coloration of the skin and mucous membranes.</p>	<p>► PPT 16-4</p>	

1 Respiratory Distress (Cont.)

Signs and symptoms of a respiratory distress

- Inability to speak in full sentences without pausing to breathe
- Noisy breathing
- Use of accessory muscles to breathe
- Tripod positioning, leaning forward, sitting upright
- Abnormal breathing rate or pattern
- Increased pulse rate
- Poor skin colour (cyanotic, pale, or ashen)

Visual Aids and Other Materials

► FC 16-1

► FC 16-2

Time Elapsed

Pre-hospital treatment for respiratory distress

Use universal precautions and secure the scene.

- 1) Move the patient away from the contaminated area (if the cause is toxic product inhalation).
- 2) Assess patient's breathing to determine if adequate. Provide artificial ventilation if needed. Maintain open airway.
- 3) Position the responsive patient in a comfortable position, usually sitting upright.
- 4) Administer oxygen per local protocol.
- 5) Comfort and reassure the patient by providing emotional support.

► PPT 16-5

► PPT 16-6

Transport the patient as soon as possible.

2

Causes of Medical Respiratory Distress

The following conditions are among the more common respiratory problems you will encounter in the field. It is not necessary to diagnose a patient's condition; in fact, the care for all respiratory conditions is essentially the same for the medical first responder.

► **Bronchial Asthma**

Bronchial asthma is an *episodic* illness characterized by the narrowing of the large air passages called the bronchi and wheezing. The patient experiences difficulty *exhaling air out of* the lungs. This is usually due to a spasm of thin muscle that lines the bronchial walls. Asthma is generally triggered by allergens, strong scents, irritating gases, smoke and weather changes.

**Visual Aids
and Other
Materials**

**Time
Elapsed**

► *FC 16-3*

► **Chronic Obstructive Pulmonary Disease (COPD)**

Emphysema and chronic bronchitis are the most common forms of COPD. Emphysema causes the alveoli to lose their *elastic properties* and become distended. This traps air and prevents the alveoli from working correctly. As more and more alveoli become affected, breathing becomes increasingly difficult for the patient. Chronic bronchitis is characterized by excessive mucus becoming trapped in the large air passages of the bronchial tree. Patients diagnosed with this condition will suffer from a *consistent productive cough*. Patients who have COPD usually have a history of smoking; however, it is also common among people who live in areas of high air pollution.

► **COVID-19 Infection**

COVID-19, the illness caused by the corona virus, starts with droplets from an infected person's cough, sneeze, or breath. Acute respiratory distress syndrome (ARDS) begins a few days later. ARDS can cause rapid breathing, a fast heart rate, dizziness, and sweating. It damages the tissues and blood vessels in alveoli, causing debris to collect inside them. This makes it harder or even impossible for to breathe. As fluid collects in your lungs, they carry less oxygen to your blood. That means your blood may not supply your organs with enough oxygen to survive. This can cause your kidneys, lungs, and liver to shut down and stop working. This would lead to multi-organ failure and ultimately death of the victim. Victim needs to be provided with immediate symptomatic treatment with anti viral drug combinations and may need enriched oxygenations and even mechanical ventilation by ventilators.

2

Causes of Medical Respiratory Distress (Cont.)

► Anaphylaxis

Anaphylaxis is an acute, severe *allergic* reaction that puts the patient's life in immediate danger. The reaction may be triggered by many different routes of exposure, including direct skin contact, ingestion, and inhalation. Exposure to the allergen will cause blood vessels to dilate rapidly and cause a *drop* in blood pressure (hypotension). Many tissues may swell, including those lining the respiratory system. This swelling can *obstruct the airway*, leading to respiratory failure. Signs and symptoms frequently observed are urticaria, oedema in the face, lips and neck. In extreme cases, oedema can appear in the larynx and glottis making it difficult for the patient to breathe.

Anaphylactic Shock

Definition: A life-threatening reaction of the body caused by something to which the patient is extremely allergic.

This condition represents a true emergency where immediate transportation to a medical centre is imperative.

Causes of anaphylactic shock

- Insect stings, including wasps and bees, ant bites
- Foods and spices (especially shellfish)
- Inhaled substances, including dust and pollen
- Chemicals inhaled or in contact with the skin
- Medications injected or taken by mouth, such as penicillin

Signs of anaphylactic shock

- **Skin:** May be swollen with burning and itching. Face and tongue may also be swollen (oedema).
- **Breathing:** Difficult and rapid breathing with possible wheezing.
- **Pulse:** Rapid, weak or not detected.
- **State of consciousness:** The patient may be restless and often becomes unconscious.

Visual Aids and Other Materials

► FC 16-3

Time Elapsed

► PPT 16-7

► PPT 16-8

► PPT 16-9

2

Causes of Medical Respiratory Distress (Cont.)

Pre-hospital treatment for anaphylactic shock

When you interview the patient, ask if he or she is allergic to anything and if they were in contact with that substance.

As with any type of shock, treat the patient with total care (see pre-hospital treatment of shock).

The patient needs medication to combat the allergic reaction. Transport the patient immediately.

Visual Aids and Other Materials

Time Elapsed

► Hyperventilation

Hyperventilation is a condition characterized by breathing too fast. It is normal for most people, such as when they are frightened, as long as the rate of breathing quickly returns to normal.

Hyperventilation syndrome is an abnormal state in which rapid breathing persists. It is commonly associated with *anxiety*. Symptoms include rapid and deep breathing, chest pain, dizziness, faintness, and numbness around the mouth, hands and feet. Not every patient who is breathing rapidly or *deeply* is hyperventilating. Several serious conditions may be the cause, including fever, infections, trauma, diabetes or overdose.

Hyperventilation is a relatively common respiratory emergency that can often be corrected by *reassuring the patient and providing emotional support*. If the patient does not respond immediately, administer oxygen per local protocol; this will not make hyperventilation worse.

► PPT 16-10

<Briefly discuss the pathophysiology of hyperventilation syndrome as needed.>

► NOTE

Avoid using the traditional method of treating anxiety-induced hyperventilation by having the patient to breathe into a paper bag. Caution should be exercised when using this technique. Remember to allow the patient to receive enough oxygen.

<Advise the participants that if the hyperventilation is due to a more serious condition, using a bag could be disastrous.>

► NOTE

If breathing does not improve with the explained measures, assume that the problem is more serious.

3

Toxic Product Inhalation

Many fire-related deaths are due to problems associated with the inhalation of toxic products of combustion rather than from burns. Patients can be affected by combustion in two different ways: *pulmonary thermal injury* (burning of the airways) and *toxic product inhalation*, to which the body's response varies depending on the poison involved. Fluid in the lungs (oedema) may develop from pulmonary thermal injury when surrounding temperatures exceed 50°C (120°F). Carbon monoxide and ammonia are common examples of inhaled toxic products. A good initial assessment and history of the exposure are important findings in the smoke-inhalation patient. The reaction to toxic gases can appear immediately or hours after the inhalation.

Signs and symptoms of toxic product inhalation

- Irritation and inflammation of air passages, eyes and nose
- Altered frequency and depth of breathing
- Possible cardio-respiratory arrest
- Singed nasal hairs
- Dusty grey spittle
- Wheezing and noisy breathing
- Coughing
- Hoarseness

Visual Aids and Other Materials

Time Elapsed

► PPT 16-11

► PPT 16-12

► PPT 16-13

► PPT 16-14

Pre-hospital treatment for toxic product inhalation

Use universal precautions and secure the scene.

- 1) Remove the patient from the contaminated area.
- 2) Conduct initial assessment and apply basic life support as necessary.
- 3) If the patient is breathing and does not have any signs of neck or spinal trauma, place the patient in a comfortable seated position.
- 4) Administer oxygen per local protocol.
- 5) Treat for shock.

Transport the patient as soon as possible.

REVIEW

- 1) Define respiratory distress, explain the signs and symptoms and describe pre-hospital treatment.
- 2) List at least three causes of breathing difficulty.
- 3) List the signs and symptoms and describe the pre-hospital treatment of smoke inhalation.

**Visual Aids
and Other
Materials**

**Time
Elapsed**

EVALUATION

- 1) Verify that the objectives have been achieved.
- 2) Fill out the lesson evaluation form in 2 minutes.

CLOSING

1. Explanations, comments, suggestions
2. Thank the participants and announce the next lesson.

— INSTRUCTOR'S COPY

POST-TEST | LESSON 16

Medical Emergencies, Part 2:

Respiratory Emergencies

1. Define respiratory distress.

Shortness of breath or a feeling of air hunger with laboured breathing.

2. List four causes of respiratory distress.

- *Bronchial asthma*
- *Chronic obstructive pulmonary disorders (COPD)*
- *Anaphylaxis*
- *Hyperventilation*

3. List seven signs and symptoms of respiratory distress.

- *Inability to speak in full sentences without pausing to breathe*
- *Noisy breathing*
- *Use of accessory muscles to breathe*
- *Tripod positioning, leaning forward, sitting upright*
- *Abnormal breathing rate or pattern*
- *Increased pulse rate*
- *Poor skin colour (cyanotic, pale, or ashen)*

4. List five steps for pre-hospital treatment of respiratory distress.

- 1) *Move the patient away from the contaminated area (if the cause is toxic product inhalation).*
- 2) *Assess patient's breathing to determine if adequate. Provide artificial ventilation if needed. Maintain open airway.*
- 3) *Position the responsive patient in a comfortable position, usually sitting upright.*
- 4) *Administer oxygen per local protocol.*
- 5) *Comfort and reassure the patient by providing emotional support.*

— INSTRUCTOR'S COPY

POST-TEST | LESSON 16

Medical Emergencies, Part 2:

Respiratory Emergencies (Cont.)

5. List eight signs and symptoms of toxic product inhalation.

- *Irritation and inflammation of air passages, eyes and nose*
- *Altered frequency and depth of breathing*
- *Possible cardio-respiratory arrest*
- *Singed nasal hairs*
- *Dusty grey spittle*
- *Wheezing and noisy breathing*
- *Coughing*
- *Hoarseness*

6. List five steps for pre-hospital treatment of toxic product inhalation.

- 1) *Remove the patient from the contaminated area.*
- 2) *Conduct initial assessment and apply basic life support as necessary.*
- 3) *If the patient is breathing and does not have any signs of trauma to the neck or back, place the patient in a comfortable seated position.*
- 4) *Administer oxygen per local protocol.*
- 5) *Treat for shock.*

LESSON 16

— PPT's

16-1



16-2

OBJECTIVES

Upon completing this lesson,
you will be able to:

- 1 Define respiratory distress.
- 2 List four causes of respiratory distress.
- 3 List seven signs and symptoms of respiratory distress.

PPT 16-2

16-3

OBJECTIVES

Upon completing this lesson,
you will be able to:

- 4 List five steps for pre-hospital treatment of respiratory distress.
- 5 List eight signs and symptoms of toxic product inhalation.
- 6 List five steps for pre-hospital treatment of toxic product inhalation.

PPT 16-3

16-4

RESPIRATORY DISTRESS

Shortness of breath or a feeling of air hunger with labored breathing.

PPT 16-4

16-5

RESPIRATORY DISTRESS

Pre-hospital Treatment

- 1) Move the patient away from the contaminated area
- 2) Assess patient's breathing to determine if adequate
- 3) Position the responsive patient in a comfortable position

PPT 16-5

16-6

RESPIRATORY DISTRESS

Pre-hospital Treatment (Cont.)

- 4) Administer oxygen per local protocol.
- 5) Comfort and reassure the patient by providing emotional support.

Transport the patient as soon as possible.

PPT 16-6

LESSON 16

— PPT's

16-7

ANAPHYLACTIC SHOCK

A life-threatening reaction of the body caused by something to which the patient is extremely allergic.

PIER | MFR | INDIA

PPT 16 - 7

16-8

CAUSES OF ANAPHYLACTIC SHOCK

- Insect bites, including wasp and bee stings
- Foods and spices (especially shellfish)
- Inhaled substances, including dust and pollen

PPT 16 - 8

16-9

CAUSES OF ANAPHYLACTIC SHOCK

CONT.

- Chemicals inhaled or in contact with the skin
- Medications injected or taken by mouth, including penicillin

PIER | MFR | INDIA

PPT 16 - 9

16-10

HYPER-VENTILATION

Pre-hospital Treatment

- Calm and reassure the patient
- Administer oxygen per local protocol
- Use caution if using the paper bag method

PPT 16 - 10

16-11

TOXIC PRODUCT INHALATION

Signs and symptoms

- Irritation and inflammation of air passages, eyes and nose
- Altered frequency and depth of breathing
- Possible cardio-respiratory arrest

PIER | MFR | INDIA

PPT 16 - 11

16-12

TOXIC PRODUCT INHALATION

Signs and symptoms

- Singed nasal hairs
- Dusty grey sputte
- Wheezing and noisy breathing
- Coughing
- Hoarseness

PPT 16 - 12

LESSON 16

— PPT's

16-13

TOXIC PRODUCT INHALATION

Pre-hospital Treatment

- 1) Remove the patient from the contaminated area.
- 2) Conduct initial assessment and apply basic life support as necessary.

PEER | MFR | INDIA

16-14

TOXIC PRODUCT INHALATION

Pre-hospital Treatment (Cont.)

- 3) If the patient is breathing and does not have any signs of neck or spinal trauma, place the patient in a comfortable seated position.
- 4) Administer oxygen per local protocol.
- 5) Treat for shock.

PPT 16-14

LESSON 16

— FLIP CHARTS

FC16-1



RESPIRATORY DISTRESS

Signs and symptoms

- Inability to speak in full sentences without pausing to breathe
- Noisy breathing
- Use of accessory muscles to breathe

FC16-2



« continued

RESPIRATORY DISTRESS

Signs and symptoms

- Tripod positioning, leaning forward, sitting upright
- Abnormal breathing rate
- Increased pulse rate
- Poor skin colour (cyanotic, pale, or ashen)

PEER | MFR | INDIA

More →
FC 16-1

PEER | MFR | INDIA

FC 16-2

FC16-3



CAUSES OF RESPIRATORY DISTRESS

- Bronchial asthma
- Chronic Obstructive Pulmonary Disease (COPD)
- COVID19
- Anaphylaxis
- Hyperventilation

PEER | MFR | INDIA

FC 16-3

17

MEDICAL EMERGENCIES,

PART 3: SEIZURES, DIABETIC EMERGENCIES AND CEREBRAL VASCULAR ACCIDENTS

Duration

- 02 Periods
- (Lecture-02 Periods)

Materials:

- Powerpoint presentation
- Computer
- Multimedia projector and screen

LESSON OBJECTIVES

Upon completion of this lesson, you will be able to:

1. Define seizure.
2. List four steps for the pre-hospital treatment for seizures when arriving while the patient is still having a seizure.
3. List five additional steps for the pre-hospital treatment for seizures to take after the seizure is over.
4. List seven signs and symptoms of hyperglycemia and list three steps for pre-hospital treatment.
5. List nine signs and symptoms of hypoglycemia and describe pre-hospital treatment.
6. List nine signs and symptoms for a cerebral-vascular accident (CVA).

	Visual Aids and Other Materials	Time Elapsed
1. INTRODUCTION <ul style="list-style-type: none"> 1) Introduce instructors and co-instructor. 2) Introduction of lesson. 3) Present lesson objectives (ask participants to read aloud.) 	 <i>PPT 17-1 to 17-4</i>	
2. DEVELOPMENT <p>This lesson deals with conditions which cause altered mental status in which patients are found to be confused or disoriented. Altered mental status is most commonly associated with seizures, diabetic emergencies and cerebral vascular accidents (CVA).</p>		

1

Seizures

Visual Aids and Other Materials

Time Elapsed

Definition: A sudden and temporary change in mental status caused by massive electrical discharge in the brain.

► PPT 17-5

Seizures are caused by a *nervous system* malfunction. If the normal functions of the brain are upset, its electrical activity can become irregular. A seizure can cause a sudden change in a person's sensations, behavior and/or movements. Some seizures involve uncontrolled muscular movements called *convulsions*. Having seizures is not a disease in itself, but rather a sign of some underlying defect, injury or disease.

Causes of seizures

- Failure to take anti-seizure medication
- Chronic medical conditions
- Epilepsy
- Hypoglycemia
- Poisoning, including alcohol and drug poisoning
- Cerebral vascular accident(CVA)
- Fever (most common in children under age 6)
- Infection
- Head injury or brain tumors
- Hypoxia (decreased levels of oxygen in the blood)
- Eclampsia (a severe complication of pregnancy)

► PPT 17-6
(FILL-INS)

This lesson will cover three of the more common causes of seizures: **Epilepsy, Fever, and Head Trauma.**

► Epilepsy

Epilepsy, an *organic* neurological illness, is perhaps the best known as one of the conditions that causes seizures. Some people are born with it and others develop it after a head injury or surgery. Conscientious use of medication allows most epileptics to live normal lives without seizures. Epilepsy can present itself in different forms. Some episodes of convulsions are severe (called *grand mal*) and some convulsions are almost undetectable (called *absent or petit mal*). An epileptic convulsive episode can repeat an indefinite number of times.

1

Seizures (Cont.)

► **Febrile seizure**

Fever is a common cause of seizures in children less than **6** years of age. It is the rapid rise in body temperature, rather than the temperature itself, that causes the seizure. The seizure can repeat many times. All children who have suffered a seizure require medical evaluation.

► **Head trauma**

A patient with a brain injury may have a seizure immediately or it might be delayed. A haematoma may form inside the skull, causing increased pressure and resulting in a seizure. It is very important to obtain a thorough patient history to determine whether the patient has fallen or received any type of head trauma.

Signs and symptoms of a seizure

The most common type of seizure you will respond to is a **grand mal** (generalized) seizure. There are four phases in this type of seizure:

- **Aura phase:** The patient becomes *aware* that the seizure is coming on, usually described as an unusual smell or flash of light, and usually lasting only a second. ► PPT 17-7
- **Tonic phase:** Patient becomes *unresponsive* and collapses. All the muscles of the body contract. The body becomes rigid and the patient may stop breathing. May become incontinent. ► PPT 17-8
- **Clonic phase:** The patient convulses violently. May foam at the mouth or drool, and may become cyanotic. ► PPT 17-9
- **Postictal phase:** Begins when convulsions *stop*. Patient gradually regains consciousness. Headache is common. ► PPT 17-10

Other common signs and symptoms for less severe seizures:

- Temporary loss of concentration or awareness
- Atypical behaviour
- Tingling, stiffening or jerking in one part of the body, which may later spread

Visual Aids and Other Materials

Time Elapsed

A continuous seizure, or two or more seizures without a period of responsiveness is called *status epilepticus*.

This is considered a true medical emergency, and can be fatal. Transport the patient immediately.

1	Seizures (Cont.)	Visual Aids and Other Materials	Time Elapsed
	<p>Pre-hospital treatment for seizures</p> <p>Use universal precautions and secure the scene.</p> <p>If you arrive while the patient is still having a seizure, begin at Step 1.</p> <ol style="list-style-type: none">1) Place patient gently on the floor and move any objects that patient might strike.2) Stay calm and wait. Do not force anything into the patient's mouth. The seizure should be over in a few minutes.3) Loosen restrictive clothing. Do not restrain patient.4) Place the patient on his/her side to prevent aspiration. <p>If you arrive after the seizure is over, begin at Step 5:</p> <ol style="list-style-type: none">5) Assess and monitor airway and breathing.6) Treat any injuries the patient may have sustained during convulsions.7) Place the patient in recovery position (only if you do not suspect spinal injury).8) Administer oxygen if needed.9) Comfort and reassure the patient. <p>For febrile seizures in children, lower the patient's temperature using tepid water and a bath sponge or washcloth. Transport the patient.</p>		

2

Diabetic Emergencies

<Explain the basics of diabetes and the function of glucose and insulin in the body.>

Diabetes is an illness caused by deficient production of insulin in the body. Your task as an MFR is not to diagnose or treat diabetes, but rather to *identify* and *treat* the conditions caused by the improper management of diabetes. These conditions are known as *hyperglycemia* (high blood sugar) and *hypoglycemia* (low blood sugar).

The most common indication that the patient may have either of these conditions is **altered mental status**. Other clues, such as a necklace, bracelet, medication or information provided by others, may also provide vital information.

Some hyperglycemic and hypoglycemic patients may appear to be alcohol-intoxicated. Always suspect a Diabetic problem even in cases that appear to be only alcohol- or drug-related. As we will also see, blood sugar problems are not always related to a diabetic condition.

2.1 Hyperglycemia

Diabetics may suffer from increased blood sugar, or hyperglycemia. This condition is basically one of too much sugar and too little insulin. Common causes of hyperglycemia in a diabetic patient include:

- Infection
- Failure of patient to take insulin, or takes insufficient amount
- Eating excessive sugar
- Increased or prolonged stress

Signs and symptoms of hyperglycemia

- Gradual onset
- Sweet, fruity breath
- Flushed, dry skin
- Hunger or thirst
- Rapid weak pulse
- Frequent urination
- Intoxicated appearance, staggering, slurred speech

Visual Aids and Other Materials

► NOTE

Time Elapsed

► PPT 17-11

► PPT 17-12

2

Diabetic Emergencies (Cont.)

The onset of severe hyperglycemia is *gradual*. In most cases it develops over a period of **12 to 48** hours. At first, the patient experiences excessive hunger, thirst, and urination. The Patient appears extremely ill, becoming weaker and worsening as the condition progresses. If left untreated, the patient may die. Even with treatment, recovery is also *gradual*, occurring 6 to 12 hours after insulin and intravenous fluid are administered. A hyperglycemic emergency is also called a **diabetic coma**, although the patient is not usually found in a coma.

Pre-hospital treatment for hyperglycemia

Use universal precautions, secure the scene and alert local EMS. Never give patients who cannot control their airways anything to eat or drink.

- 1) Perform initial assessment and obtain patient history.
- 2) Administer glucose. When in doubt, give sugar.
- 3) Reassess and transport the patient.
Position the patient appropriately.

Visual Aids and Other Materials**Time Elapsed****2.2 Hypoglycemia**

This condition is consists of *low* blood sugar, and can be the result of one or two conditions. One is too much insulin in the bloodstream. The other is too little sugar in the bloodstream. People with diabetes are not the only ones who can suffer from low blood sugar. Alcoholics, anyone having ingested certain poisons, and people who are ill are also at risk.

Some common causes of low blood sugar are:

- Skipped meals, particularly for diabetics
- Vomiting, especially with illness
- Strenuous exercise
- Physical stress from extreme heat or cold
- Emotional stress
- Accidental overdose of insulin

► PPT 17-13

2

Diabetic Emergencies (Cont.)

The onset of severe hypoglycemia is *sudden*. The most recognized cause of Hypoglycemia is the *accidental overdose of insulin* by a patient with diabetes. After time, diabetes cause visual impairment in patients. This can make it very hard for patients to give themselves the proper amount of insulin. The result is an insulin overdose and hypoglycemia.

Signs and symptoms of hypoglycemia

- Rapid onset of altered mental status
- Intoxicated appearance, staggering, slurred speech
- Atypical behavior
- Combativeness and/or anxiety
- Rapid pulse rate
- Cool, clammy skin
- Hunger
- Headache
- Seizures

Visual Aids and Other Materials

Time Elapsed

► PPT 17-14

► PPT 17-15

Pre-hospital treatment for hypoglycemia

Use the same treatment as for hyperglycemia.

COMPARISON CHART

	Hyperglycaemia	Hypoglycaemia
Onset		Sudden, within minutes
Causes		<ul style="list-style-type: none">• Too much insulin, or inability to adjust to new dosage• Inadequate food intake• Vomiting• Excessive exercise• Emotional excitement

2

Diabetic Emergencies (Cont.)

2.4 Cerebral Vascular Accident (CVA)

Definition: A sudden loss of blood supply to the brain.

Visual Aids
and Other
Materials

Time
Elapsed

► PPT 17-16

CVA, commonly known as a “stroke,” is also becoming known as “brain attack”.

Causes of CVA

- **Cerebral thrombosis:**

The result of a clot obstructing a cerebral artery, preventing the flow of oxygenated blood to a portion of the brain.

► PPT 17-17

- **Cerebral haemorrhage:**

The result of a cerebral artery breaking, leaving an area of the brain without blood supply. The blood that comes out of this artery creates intracranial pressure to the brain and interferes in the brain's functions.

Signs and symptoms of CVA

These vary depending on the location and extent of damage:

- Headache – may be the first and only symptom
- Fainting (syncope)
- Altered mental status
- Tingling or paralysis of the extremities or face
- Difficulty speaking
- Blurred vision
- Convulsions and/or seizures
- Unequal pupils
- Loss of bladder or bowel control

► PPT 17-18

► PPT 17-19

► PPT 17-20

If any one of these signs or symptoms is present, assume that the patient is having or is about to have a cerebral vascular accident.

The risk of having a CVA increases with age.

2**Diabetic Emergencies (Cont.)****Visual Aids
and Other
Materials****Time
Elapsed****Pre-hospital treatment for CVA**

Use universal precautions and secure the scene.

- 1) Instruct the patient to stop all movement.
- 2) Place the responsive patient in a comfortable position, usually semi-reclining or sitting.
- 3) Maintain open airway.
- 4) Administer oxygen. If needed, provide artificial ventilation or CPR.
- 5) Loosen restrictive clothing.
- 6) Maintain body temperature as close to normal as possible.
- 7) Comfort and reassure the patient.
- 8) Constantly monitor the patient's vital signs.
- 9) *When immobilizing the patient, protect the paralyzed part.*

REVIEW

- 1) Define seizures.
- 2) List four steps for the pre-hospital treatment for seizures when arriving while the patient is still having a seizure.
- 3) List five additional steps for the pre-hospital treatment for seizures to take after the seizure is over.
- 4) List seven signs and symptoms for hyperglycemia and list three steps for pre-hospital treatment.
- 5) List nine signs and symptoms hypoglycemia and describe pre-hospital treatment.
- 6) List nine signs and symptoms of a cerebral-vascular accident (CVA).
- 7) Verify that the objectives were achieved.

Visual Aids and Other Materials

Time Elapsed

EVALUATION

- 1) Verify that the objectives have been achieved.
- 2) Ask participants to fill out lesson evaluation form in 2 minutes.

CLOSING

Thank the participants and announce the next lesson.

— INSTRUCTOR'S COPY

POST-TEST | LESSON 17

Medical Emergencies, Part 3:

Seizures, Diabetic Emergencies and Cerebral Vascular Accidents

1. Define seizure.

A sudden and temporary change in mental status cause by massive electrical discharge in the brain.

2. List four steps for the pre-hospital treatment for seizures when arriving while the patient is still having a seizure.

- 1) Place patient gently on the floor and move any objects that patient might strike.
- 2) Stay calm and wait. Do not force anything into the patient's mouth. The seizure should be over in a few minutes.
- 3) Loosen restrictive clothing. Do not restrain (hold) patient.
- 4) Place the patient on his/her side to prevent aspiration.

3. List Steps 5 through 9 for the pre-hospital treatment for seizures to take after the seizure is over.

- 5) Assess and monitor airway and breathing.
- 6) Treat any injuries the patient may have sustained during convulsions.
- 7) Place the patient in recovery (if you do not suspect spinal injury).
- 8) Administer oxygen per local protocol.
- 9) Comfort and reassure the patient.

— INSTRUCTOR'S COPY

POST-TEST | LESSON 17**Medical Emergencies, Part 3:**

Seizures, Diabetic Emergencies and Cerebral Vascular Accidents (Cont.)

4. List seven signs and symptoms for hyperglycemia and list three steps for pre-hospital treatment.

Signs and symptoms

- *Gradual onset*
- *Sweet, fruity breath*
- *Flushed, dry skin*
- *Hunger or thirst*
- *Rapid weak pulse*
- *Frequent urination*
- *Intoxicated appearance, staggering, slurred speech*

Pre-hospital treatment

- 1) *Perform initial assessment and obtain patient history.*
- 2) *Administer oral glucose per local protocol. When in doubt, give sugar.*
- 3) *Reassess and transport the patient. Position the patient appropriately.*

5. List nine signs and symptoms hypoglycemia and describe pre-hospital treatment.

Signs and symptoms

- *Rapid onset of altered mental status*
- *Intoxicated appearance, staggering, slurred speech*
- *Atypical behavior*
- *Combativeness and/or anxiety*
- *Rapid pulse rate*
- *Cool, clammy skin*
- *Hunger*
- *Headache*
- *Seizures*

Pre-hospital treatment

The same as for hyperglycemia.

— INSTRUCTOR'S COPY

POST-TEST | LESSON 17

Medical Emergencies, Part 3:

Seizures, Diabetic Emergencies and Cerebral Vascular Accidents (Cont.)

6. List ten signs and symptoms of a cerebral-vascular accident (CVA).

Signs and symptoms

- *Headache - may be the first and only symptom.*
- *Fainting (syncope)*
- *Altered level of consciousness*
- *Tingling or paralysis of the extremities or face*
- *Difficulty speaking*
- *Blurred vision*
- *Convulsions*
- *Unequal pupils*
- *Loss of bladder or bowel control*

LESSON 17

— PPT's

17-1



17-2

OBJECTIVES

Upon completing this lesson, you will be able to:

- 1 Define seizures.
- 2 List four steps for the pre-hospital treatment for seizures when arriving while the patient is still having a seizure.

PPT 17-1

PEER | MFR | INDIA

PPT 17-2

17-3

OBJECTIVES

Upon completing this lesson, you will become familiar with:

- 3 List five additional steps for the pre-hospital treatment for seizures to take after the seizure is over.
- 4 List seven signs and symptoms for hyperglycemia and list three steps for pre-hospital treatment.

PEER | MFR | INDIA

17-4

OBJECTIVES

Upon completing this lesson, you will become familiar with:

- 5 List nine signs and symptoms of hypoglycemia and describe pre-hospital treatment.
- 6 List nine signs and symptoms for a cerebral vascular accident (CVA).

PPT 17-3

PEER | MFR | INDIA

PPT 17-4

17-5

SEIZURE

A sudden and temporary change in mental status caused by massive electrical discharge in the brain.

PEER | MFR | INDIA

17-6

CAUSES OF SEIZURES



PEER | MFR | INDIA

PPT 17-5

LESSON 17

— PPT's

17-7

SEIZURES

Aura phase:

The patient becomes aware that the seizure is coming on, usually described as an unusual smell or flash of light, usually lasting only a second.

PEER | MFR | INDIA

PPT 17 - 7

17-8

SEIZURES

CONT.

Tonic phase:

Patient becomes unresponsive and collapses. All the muscles of the body contract. The body becomes rigid and the patient may stop breathing. May become incontinent.

PEER | MFR | INDIA

PPT 17 - 8

17-9

SEIZURES

CONT.

Clonic phase:

The patient convulses violently. May foam at the mouth or drool, and may become cyanotic.

PEER | MFR | INDIA

PPT 17 - 9

17-10

SEIZURES

CONT.

Postictal phase:

Begins when convulsions stop. Patient gradually regains consciousness. Headache is common.

PEER | MFR | INDIA

PPT 17 - 10

17-11

HYPERGLYCEMIA

Signs and symptoms

- Gradual onset
- Sweet, fruity breath
- Flushed, dry skin
- Hunger or thirst

PEER | MFR | INDIA

PPT 17 - 11

17-12

HYPERGLYCEMIA

Signs and symptoms

CONT.

- Rapid weak pulse
- Frequent urination
- Intoxicated appearance, staggering, slurred speech

PEER | MFR | INDIA

PPT 17 - 12

LESSON 17

— PPT's

17-13

HYPOGLYCEMIA

Common Causes

- Skipped meals
- Vomiting
- Strenuous exercise
- Physical stress from extreme heat or cold
- Emotional stress
- Accidental overdose of insulin

PEER | MFR | INDIA

17-14

HYPOGLYCEMIA

Signs and symptoms

- Rapid onset of altered mental status
- Intoxicated appearance, staggering, slurred speech
- Atypical behaviour

PPT 17-14

17-15

HYPOGLYCEMIA

Signs and symptoms CONT.

- Combativeness and/or anxiety
- Rapid pulse rate
- Cool, clammy skin
- Hunger
- Headache
- Seizures

PEER | MFR | INDIA

17-16

CEREBRAL VASCULAR ACCIDENT

A sudden loss of blood supply to the brain.

PPT 17-16

17-17

CEREBRAL VASCULAR ACCIDENT

Causes



• Cerebral thrombosis



• Cerebral hemorrhage

PEER | MFR | INDIA

17-18

CEREBRAL VASCULAR ACCIDENT

Signs and symptoms

- Headache (may be the first and only symptom)
- Fainting
- Altered mental status

PPT 17-18

LESSON 17

— PPT's

17-19

CEREBRAL VASCULAR ACCIDENT

Signs and symptoms CONT

- Tingling or paralysis of the extremities or face
- Difficulty speaking
- Blurred vision

PEER | MFR | INDIA

<http://www.breechbirth.net/>

17-20

CEREBRAL VASCULAR ACCIDENT

Signs and symptoms CONT

- Convulsions
- Unequal pupils
- Loss of bladder or bowel control

PPT 17-19

PEER | MFR | INDIA

PPT 17-20

18

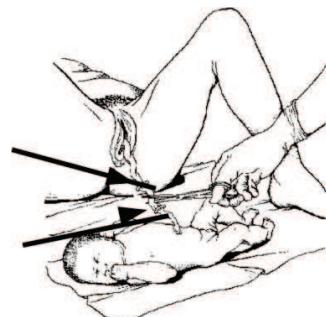
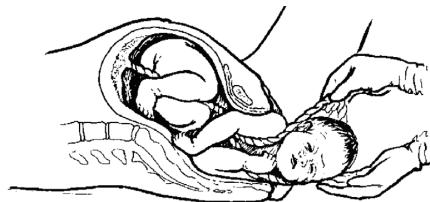
CHILDBIRTH EMERGENCIES

Duration

• 09 Periods • (Lecture-03 Periods and Practical- 06 Periods)

Materials:

- Flipcharts
- Powerpoint presentation
- Computer
- Multimedia projector and screen
- Handout
- 2 childbirth mannequins
- 4 obstetrical kits
- Two assistants



LESSON OBJECTIVES

**Upon completion of this lesson,
you will be able to:**

1. List the eight steps for assessment of the mother.
2. List the seven steps for pre-hospital preparation of the mother.
3. List the ten steps for delivery of a baby.
4. List and describe three complications of pregnancy.
5. List and describe six complications of delivery.
6. Demonstrate the pre-hospital treatment for a breech presentation and a wrapped umbilical cord around the neck.

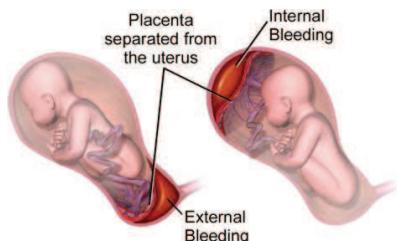
1. INTRODUCTION

- 1) Introduction of instructor and co-instructor.
- 2) Presentation of the lesson.
- 3) Presentation of lesson objectives (ask participants to read them from WB).

**Visual Aids
and Other
Materials**

**Time
Elapsed**

► PPT 18-1
to 18-4



Blausen.com staff (2014). "Medical gallery of Blausen Medical 2014".
WikiJournal of Medicine 1 (2). DOI:10.15347/wjm/2014.010. ISSN 2002-4436. - Own work



2. DEVELOPMENT

1

Anatomy of Pregnancy

- **Amniotic sac:** A sac of fluid in which the foetus develops during pregnancy.
- **Cervix:** The neck of the uterus in which the unborn infant passes into the vagina.
- **Foetus:** The unborn developing baby in the uterus.
- **Placenta:** A disk-shaped organ on the inner lining of the uterus. Rich in blood vessels, it supplies nourishment and oxygen to the foetus during pregnancy. It also absorbs waste from the foetus into the mother's bloodstream.
- **Umbilical cord:** An extension of the placenta through which the foetus receives nourishment while in the uterus.
- **Uterus:** The organ that contains the developing foetus or unborn infant. A special arrangement of smooth muscles and blood vessels in the uterus allow for great expansion during pregnancy and forcible contractions during labour and delivery.
- **Vagina:** Channel through which the infant passes to reach the outside.

Visual Aids and Other Materials

► PPT 18-5

Time Elapsed

2

Stages of Labour

1) First stage (dilation):

Begins with the mother's contractions and ends when the infant enters the birth canal. During this first and longest stage, the cervix becomes fully dilated (expanded).

► PPT 18-7

2) Second stage (expulsion):

Begins the moment the infant moves into the birth canal. When the baby's head appears at the opening of the birth canal, it is called "crowning". The second stage ends with the birth of the infant.

► PPT 18-8

3) Third stage (placental):

The placenta separates from the uterine wall. It is usually then spontaneously expelled from the uterus.

► PPT 18-9

3

Assessment of the Mother

Use universal precautions and secure the scene.

- 1) Conduct initial assessment.
- 2) Ask if the patient has received prenatal care (by a doctor). If patient is under the care of a doctor, get the doctor's name and telephone number. Ask the patient if the doctor has informed her of any difficulties with the pregnancy and if the delivery is to be normal. Ask when her due date is.
- 3) Ask the patient if it is her first pregnancy. If so, the labour process will usually last close to 18 hours. The duration of labour is considerably shorter with each subsequent birth (approximately 2-3 hours).
- 4) Determine when contractions began and if the amniotic sac (water bag) has ruptured.
- 5) Ask the patient if she feels any pressure being applied to pelvis or the urge for a bowel movement. Do not allow patient to sit on toilet.
- 6) Determine the frequency and duration of contractions. Place a gloved hand on the patient's abdomen above the navel; feel for the involuntary tightening of the uterine muscles. Time the **duration** of contractions, from the moment the muscles tighten until they are completely relaxed. Then, time the **frequency**, from the start of one contraction to the start of the next.
- 7) Visual evaluation: Check for crowning or bulging in the vaginal area. If no crowning, move to next step. If either the head or other part of the body is visible, prepare to deliver at the scene.
- 8) Determine if delivery will be at the scene or if there is time for transport:
 - If contractions are less than 2 minutes apart, prepare to deliver the baby at the scene.
 - If contractions are between 2 and 5 minutes apart, make a decision on several factors, such as whether this is the first pregnancy, if the patient feels an urge for a bowel movement, traffic and weather conditions, or other complication.
 - If contractions are 5 minutes or more apart, the mother usually has time for transport.

**Visual Aids
and Other
Materials**

► *FC 18-1*

► *FC 18-2*

**Time
Elapsed**

CAUTION: Do not allow the mother to cross or hold her legs together to delay delivery. Death or permanent injury to the infant may result.

4

Pre-hospital Preparation of the Mother**<Demonstrate treatment in this order.>**

Use universal precautions and secure the scene.

Make sure to use full personal protective equipment.

- 1) Ensure privacy for the patient (select an appropriate area).
Always get help from female attendant/husband
- 2) Have the mother lie on her back with knees bent and legs spread. Elevate the buttocks slightly by placing a blanket or towel underneath. Inspect the vaginal area but do not touch it except during delivery of the baby.
- 3) Have O.B. (obstetrical) kit ready and opened.
- 4) Place a sheet or clean towel under the patient's buttocks, another under the vaginal area and another covering the legs and abdomen.
- 5) Evaluate frequency and duration of contractions.
- 6) Check for crowning.
- 7) Comfort and reassure the mother. Encourage her to keep breathing slowly and comfortably. Stress the importance of relaxing between each contraction.

**Visual Aids
and Other
Materials**

► PPT 18-10

**Time
Elapsed**

5

Delivery of the Baby

- 1) Apply very gentle pressure with the palm of your hand to prevent explosive delivery. **Do not pull the infant from the vaginal opening.**
- 2) If the amniotic sac (water bag) has not broken, **tear it or pinch it open with your fingers** and pull it away from the infant's mouth and head. Do not delay this process. **Never use a sharp instrument!**
- 3) **If the umbilical cord is wrapped around the newborn's neck**, use two gloved fingers to slip the cord over the head. **Only if you cannot dislodge the umbilical cord**, attach two clamps three inches apart, then cut between the clamps.
- 4) **Support the baby's head.** The infant's head generally comes out face down and then a rotation begins toward either side. As soon as the baby's head presents, wipe the mouth and nose with sterile gauze pads. **Suction the baby's mouth first, then the nose**, using a rubber bulb syringe. Be sure to compress the syringe every time **before** inserting it.
- 5) Support the newborn with both hands as the rest of the body presents. **Gently guide the newborn's head downward** to assist the mother in delivering the newborn's upper shoulder. If the lower shoulder is slow to deliver, assist the delivery by gently guiding the newborn's head upward.
- 6) Support the newborn throughout the entire process. Grasp the feet as they emerge. **Once fully delivered, position the baby level with the mother's vagina until the umbilical cord is cut**; otherwise the newborn's blood could return to the placenta. The newborn is very slippery — never lift the baby by the feet. **Note the exact time of delivery.**
- 7) **Position, dry and wrap the baby.** Place the baby on his/her side with the head slightly lower than the body. This will allow the blood and other fluids to drain from the baby's mouth and nose. Gently dry the baby with clean towels and wrap him/her in a clean warm blanket. Only the face should be exposed.

Visual Aids
and Other
Materials

Time
Elapsed

► PPT 18-11

► PPT 18-12

► PPT 18-13

5

Delivery of the Baby (Cont.)

<Discuss and cover the use of the APGAR Scoring System Handout located at the end of this lesson.>

- 8) **Assess the newborn's breathing.** Suction the newborn's mouth and nose again, in that order. Usually the new born will start breathing on its own within 30 seconds of being born. If not, encourage breathing by providing tactile stimulation, rubbing the back gently but vigorously, or by snapping a finger against the sole of the newborn's foot. Do not lift the newborn by its feet to slap its bottom! If assessment reveals shallow, slow or absent respiration, start artificial ventilation.
- 9) **Clamp and cut the umbilical cord when it stops pulsating.** Palpate the cord to make sure it is no longer pulsating before clamping; do not clamp or cut the cord if it is still pulsating. Position the first clamp approximately 25 cm. from the baby; then position the second clamp 8 cm. away from the first clamp toward the baby, then cut the cord using surgical scissors.
- 10) **Record the date, time and place of birth as noted in the step 6.**

Visual Aids and Other Materials

► NOTE

► PPT 18-14

► PPT 18-15

Time Elapsed

6

Delivery of the Placenta

Keep in mind that you have **two** patients in your care: not only the baby, but the mother as well. Care for the mother includes helping her deliver the placenta, controlling vaginal bleeding, and making her as comfortable as possible. The third stage of labour includes the delivery of the placenta with its section of umbilical cord, membranes of the amniotic sac, and some tissues lining the uterus. All of these together are known as the **afterbirth**.

- 1) Observe for delivery of placenta. This begins with a brief return of labour pains that stopped when the baby was born. You may notice a lengthening of the cord.
- 2) Feel for contractions. Encourage the mother to bear down as the uterus contracts.
- 3) As the placenta appears, slowly and gently guide it from the vagina, but never pull. Save the placenta in a plastic bag. In most cases, the placenta is expelled within a few minutes of delivery, but could take up to 30 minutes. Take the placenta to the hospital for examination by the physician.
- 4) Controlling vaginal bleeding after delivery.
 - Place sanitary napkin or towel on vaginal opening. Do not place anything inside vagina.
 - Have the mother lower her legs and keep them together without squeezing. Elevate her feet.
 - Feel the mother's abdomen below the navel until you feel a hard object the size of a grapefruit. This is the mother's uterus. If bleeding appears to be excessive, massage the uterus using circular motions; this will cause the uterus to contract and control bleeding.
 - Consider initiating breast-feeding to stimulate uterine contractions.
- 5) Conduct ongoing assessment.

**Visual Aids
and Other
Materials**

**Time
Elapsed**

7

Complications of Pregnancy

There are several types of pre-delivery emergencies that may arise in the pregnant patient prior to labour or childbirth that are life-threatening to both the mother and the baby. In most cases, definitive treatment is beyond the MFR's level of training and immediate transport is required.

Excessive pre-birth bleeding

A number of conditions can cause excessive pre-birth bleeding. One such condition is **placenta previa**, in which the placenta is formed in an abnormal location (low in the uterus and close to or over the cervical opening) that will not allow for a normal delivery. As the cervix dilates, it causes the placenta to tear.

Another condition is **abruptio placentae**, in which the placenta separates from the uterine wall, either partially or entirely. Either type of complication may occur in the third trimester, and both are potentially life-threatening to the mother and foetus.

Visual Aids
and Other
Materials

Time
Elapsed

► FC 18-3

Pre-hospital treatment for pre-birth bleeding

- 1) Place the patient on her left side.
- 2) Treat for shock. Elevate the patient's legs.
- 3) Place a sanitary napkin or towel at vagina opening but do not place anything inside the vagina. Replace any blood soaked napkins but do not discard them. All blood soaked items should be taken to hospital for examination.
- 4) Monitor all vital signs.
- 5) Transport the patient.

7

Complications of Pregnancy (Cont.)

Spontaneous Abortion

For a number of reasons, the foetus and placenta may deliver before the 20th week of pregnancy, generally before the baby can live on its own. This occurrence is called an abortion. When it happens naturally it is called a **spontaneous abortion**, or **miscarriage**. An induced abortion results from deliberate termination of the pregnancy, in either a legal or criminal setting.

Signs and symptoms of spontaneous abortion

- Vaginal bleeding, ranging from moderate to severe
- Pain in the lower abdomen, similar to menstrual cramps or first stage labour pain
- Noticeable discharge of tissue from the vagina

Pre-hospital treatment for spontaneous abortion

- 1) Treat for shock. Provide oxygen per local protocol.
- 2) Place a sanitary towel or something similar on the opening of the vagina. Do not place anything inside the vagina.
- 3) Keep all the bloodstained towels and any expelled tissue for examination.

Transport the patient.

Ectopic Pregnancy

In a normal pregnancy, the fertilized egg will eventually implant on the wall of the uterus. In an ectopic pregnancy, the fertilized egg implants in an oviduct, in the abdominal cavity, or outside the uterus. These areas are not able to contain or support the growing embryo.

Signs and symptoms of ectopic pregnancy

- Acute abdominal pain, usually on one side
- Vaginal spotting or bleeding
- Signs of shock

Pre-hospital treatment for ectopic pregnancy

- 1) Treat for shock. Provide oxygen per local protocol.
- 2) Keep all the bloodstained towels and any expelled tissue for examination.
- 3) Transport the patient.

Visual Aids and Other Materials

Time Elapsed

8

Complications of Delivery

Although most babies are born without difficulty, complications may also occur during delivery. As with complications of pregnancy, these can also be life-threatening to both the mother and the baby, and in many cases definitive **treatment is beyond the MFR's level of training.**

Unbroken Amniotic Sac (Water bag)

If the amniotic sac (water bag) has not broken, **tear it or pinch it open with your fingers** and pull it away from the newborn's mouth and head. Do not delay this process. **Never use a sharp instrument!**

Visual Aids and Other Materials

Time Elapsed

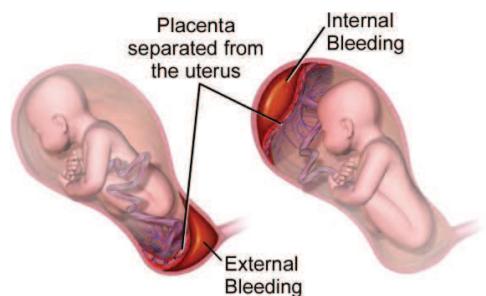
► FC 18-4

Breech Birth

This type is the most common abnormal delivery. A breech birth involves a buttocks-first or both-feet-first delivery. In addition, there is an increased risk of a prolapsed umbilical cord. Whenever possible, the mother should be transported to a hospital immediately for birth.

Pre-hospital treatment for breech birth

- 1) Position and prepare the mother for normal delivery.
- 2) Allow the buttocks or legs to deliver on their own — **never pull.**
- 3) Support the baby with the palm of your hand. The head should follow within **three minutes.**
- 4) If the head fails to deliver, **maintain infant airway and transport immediately.** Place the middle and index fingers of your gloved hand alongside the infant's face. Your palm should be turned towards the face. Form an airway by pushing the vagina away from the infant's face. With a finger, hold the baby's mouth open a little so that the baby can breathe.

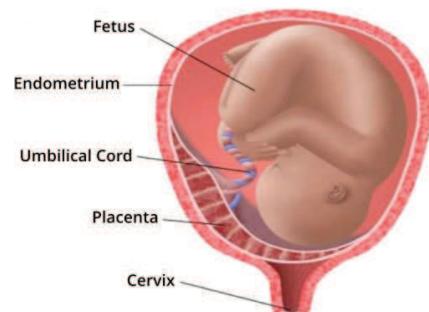


Blasen.com staff
(2014). "Medical
gallery of Blasen
Medical 2014".
Wikijournal of
Medicine 1(2).
DOI:10.15347/wjm/
2014.010. ISSN
2002-4436. - Own
work

Breech birth



Total Placenta Previa



Complications of Delivery (Cont.)

Prolapsed Umbilical Cord

This is a situation in which the umbilical cord presents first (common in breech births) and is squeezed between the vaginal wall and the head of the baby. This may cause oxygen supply to the baby to be totally interrupted. If, upon viewing the vaginal area, you see the umbilical cord presenting, the cord is prolapsed.

**Visual Aids
and Other
Materials**

**Time
Elapsed**

Pre-hospital treatment for prolapsed umbilical cord

- 1) Do not try to push the cord inside the vagina.
- 2) Position the mother. Have the mother lie down on her back, tilted to the left side (if possible). Elevate her hips, using a pillow or blankets under the buttocks.
- 3) Provide oxygen if needed.
- 4) Wrap the exposed cord with a clean moistened towel.
- 5) Insert a gloved hand into the vagina far enough to gently push on the baby's head (or buttocks), to keep pressure off the cord. You may feel the cord pulsating when the pressure is released. Prepare to stay in this position throughout transport.

Transport the patient immediately.

8**Complications of Delivery (Cont.)****Limb Presentation**

A limb presentation is a situation in which a single leg, an arm and a leg together, or an arm and shoulder, present first. This is often accompanied by a prolapsed umbilical cord. Limb presentations cannot be delivered in the pre-hospital setting. Position the mother on her back with pelvis elevated, provide oxygen per local protocol and transport immediately. If prolapsed cord is present, apply treatment as discussed previously.

**Visual Aids
and Other
Materials****Time
Elapsed****Pre-hospital treatment for limb presentation**

- 1) Do not pull on the limb or try to place your gloved hand into the birth canal.
- 2) Do not try to place the limb back into the vagina.
- 3) Place the mother in the knee-chest position to help reduce pressure on the fetus and the umbilical cord.
- 4) Provide oxygen per local protocol and transport immediately.
- 5) If prolapsed cord is present, apply treatment as discussed previously.

Multiple Births

Twins are delivered the same way as single babies; in fact, since twins are smaller, delivery is often easier. Multiple birth may occur if the mother's abdomen is unusually large before, or remains large after, delivery. If labour contractions continue (usually within 10 minutes) after the first birth, the next delivery may be imminent.

Pre-hospital treatment for multiple births

- 1) Clamp or tie the cord of the first baby before the second baby is born.
- 2) The second baby may be born before or after the placenta is delivered.
- 3) Provide care for the babies, umbilical cords, placenta(s), and the mother as in a normal delivery.

8**Complications of Delivery (Cont.)****Premature Birth**

By definition, a premature infant is one who weighs less than 2.5 kilos (5.5 lbs.) or is born before the 36th week of pregnancy. Since you will probably not be able to weigh the baby, make a determination regarding prematurity based on the mother's information and the baby's appearance. The head of a premature baby is proportionately much larger, and the body is smaller and more reddish than a normal baby. Premature babies are very susceptible to infection.

**Visual Aids
and Other
Materials****Time
Elapsed****Pre-hospital treatment for a premature baby**

- 1) Keep the baby warm.
- 2) Maintain open airway.
- 3) Watch the umbilical cord for bleeding.
- 4) Provide oxygen if needed.
- 5) Avoid contamination. Keep the baby away from people and avoid breathing directly onto the baby.

8

Complications of Delivery (Cont.)

Stillbirth

This is a situation in which the baby dies in the womb hours, days, or even weeks before birth. Signs of obvious death include the presence of blisters, foul odour, skin or tissue deterioration and discolouration, and a softened head. At other times, the baby may be born in cardiac or pulmonary arrest but may survive with resuscitation.

Managing a Stillbirth

- **Do not attempt to revive the baby if it appears to have been dead for an extended period of time.** Offer emotional support for the mother and relatives that might be present.
- A baby born in cardiac or pulmonary arrest should receive basic life support.
- **Do not lie** to the mother regarding the baby's condition, and do not prevent her from seeing the baby.
- **Comply with the mother's religious beliefs** and follow local customs, laws and protocols.

Visual Aids
and Other
Materials

Time
Elapsed

REVIEW

<Review objectives on page 1 and ensure all participants have understood them clearly.>

Visual Aids and Other Materials

Time Elapsed

PRACTICAL EXERCISES

1. Divide the participants into groups of 6 (maximum).
2. Observe each participant and correct if necessary.
Allow them to practice until they can execute each step without error.
3. Each participant should practice with a childbirth mannequin.

EVALUATION

- 1) Verify that the objectives have been achieved.
- 2) Allow 2 minutes for participants to fill out lesson evaluation form.

CLOSING

1. Thank the participants and announce the next lesson.

APGAR Scoring System

		Points	One minute	Five minutes
A	Appearance (skin color)			
	Blue or pale trunk and extremities	0		
	Pink trunk and blue extremities	1		
P	Pulse			
	Absent	0		
	100 or less	1		
G	Grimace (Irritability)			
	No response	0		
	Grimace or whispers	1		
A	Activity (Muscle tone)			
	Flaccid, Limp	0		
	Some flexion of extremities	1		
R	Respiratory effort			
	Absent	0		
	Slow and irregular	1		
	Strong cry	2		
	Total Score			

Ideally, scores are taken at one minute and five minutes after birth.

If the neonate is not breathing, DO NOT withhold resuscitation for an APGAR score.

Total score indicates the following:

- **7-10:** Indicates an active and vigorous newborn who requires routine care.
- **4-6:** Indicates a moderately depressed newborn who requires oxygen and stimulation.
- **0-3:** Indicates a severely depressed newborn who requires immediate resuscitation efforts.

PRACTICAL EXERCISE

Childbirth Emergencies

Station 1:

Normal delivery of infant and placenta

Station 2:

Care of the newborn infant

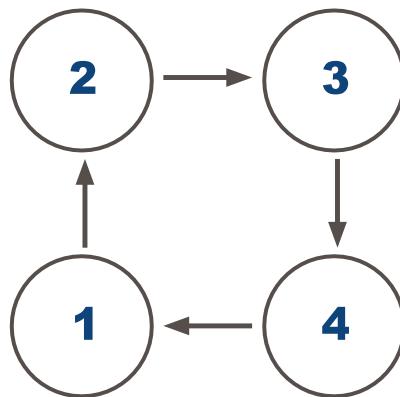
Station 3:

Childbirth complications: breech birth, prolapsed cord, and an umbilical cord around the neck

Station 4:

Assessment of the mother for imminent delivery

Rotation type for this lesson:



Number of rotations:

4

Duration:

3 hours (45 minutes per station)

<NOTE: After a brief explanation of the mechanics of this station, let participants begin practising. Do not spend time explaining material that was already covered during lecture. An instructor will be in charge of each station and responsible for filling out the evaluation.>

<Allow time for questions.>

MFR LESSON 18

PRACTICAL EXERCISE

Childbirth Emergencies (Cont.)

Station 1:

Normal delivery of infant and placenta

Materials

- PPE for each participant
- Disinfectant and dressings
- One sheet per mannequin
- 2 or 3 infant mannequins
- One childbirth (OB) kit
- Instructor evaluation form (Skills Checklist)

Station 2:

Care of the newborn infant

Materials

- PPE for each participant
- Disinfectant and dressings
- One sheet per mannequin
- 2 or 3 infant mannequins
- 2 infant BVM's
- 2 infant CPR masks
- APGAR score sheet (handout)
- Instructor evaluation form (Skills Checklist)

PRACTICAL EXERCISE

Childbirth Emergencies (Cont.)

Station 3:

Childbirth complications: breech birth, prolapsed cord, and an umbilical cord around the neck

Materials

- PPE for each participant
- One participant to act as patient
- One childbirth mannequin
- One childbirth (OB) kit
- Extra dressings
- Four clean sheets
- Instructor evaluation form (Skills Checklist)

Station 4:

Assessment of the mother for imminent delivery

Materials

- PPE for each participant
- One childbirth mannequin
- One childbirth (OB) kit
- Extra dressings
- Four clean sheets
- Instructor evaluation form (Skills Checklist)

MFR LESSON 18
SKILLS CHECKLIST



Stations 1, 2, 3 and 4

Student Name: _____ **Dates:** _____

Instructions: Check the box showing on which attempt the participant was able to perform the step successfully. UTP indicates unable to perform successfully within four attempts.

Performance Guidelines		Successful on Attempts				UTP
		1	2	3	4	
Station 1	Use of PPE.					
	Normal delivery.					
Station 2	Use PPE.					
	Care of the newborn infant.					
Station 3	Use PPE.					
	Treat prolapsed umbilical cord.					
	Treat breech birth.					
	Treat umbilical cord wrapped around the neck.					
Station 4	Use of PPE.					
	Assess the mother.					

Comments _____

Overall Performance						
Station 1	Station 2					
<input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp.	<input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp.					
Instructor:	Instructor:					
Station 3	Station 4					
<input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp.	<input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp.					
Instructor:	Instructor:					

POST-TEST | LESSON 18

Childbirth Emergencies

1. List the eight steps for preparation of the mother.

- 1) *Conduct initial assessment.*
- 2) *Gather information on prenatal care, doctor, potential difficulties with pregnancy, when due date is.*
- 3) *Ask the patient if it is her first pregnancy.*
- 4) *Determine when contractions began and if the amniotic sac (water bag) has ruptured.*
- 5) *Ask the patient if she feels any pressure being applied to pelvis or the urge for a bowel movement. Do not allow patient to sit on toilet. C*
- 6) *Determine the frequency and duration of contractions.*
- 7) *Visual evaluation: Check for crowning or bulging in the vaginal area. If no crowning, move to next step. If the head or other part of the body is visible, prepare to deliver at the scene.*
- 8) *Determine if delivery will be on scene or if there is time for transport:*

2. List the seven steps for pre-hospital treatment of the mother.

- 1) *Ensure privacy for the patient (select an appropriate area).*
- 2) *Have the mother lie on her back with knees bent and legs spread. Elevate the buttocks slightly by placing a blanket or towel underneath. Inspect the vaginal area but do not touch it except during delivery of the baby.*
- 3) *Have an O.B. (obstetrical) kit ready and opened.*
- 4) *Place a sheet or clean towel under the patient's buttocks, another under the vaginal area and another covering the legs and abdomen.*
- 5) *Evaluate frequency and duration of contractions.*
- 6) *Check for crowning.*
- 7) *Comfort and reassure the mother. Encourage her to keep breathing slowly and comfortably. Stress the importance of relaxing between each contraction.*

— INSTRUCTOR'S COPY

POST-TEST | LESSON 18

Childbirth Emergencies (Cont.)

3. List the ten steps for delivery of a baby.

- 1) Place the palm of your hand against the top of the baby's head; prevent an explosive delivery. **Do not pull the infant from the vaginal opening.**
- 2) If the amniotic sac (water bag) has not broken, tear it or pinch it open with your fingers and pull it away from the infant's mouth and head. Never use a sharp instrument!
- 3) If the umbilical cord is wrapped around the infant's neck, use two gloved fingers to slip the cord over the head. **Only if you cannot dislodge the umbilical cord, attach two clamps three inches apart. Then cut between the clamps.**
- 4) Support the baby's head. Wipe the mouth and nose with sterile gauze pads. Suction the baby's mouth and nose using a rubber bulb syringe.
- 5) Support the baby with both hands as the rest of the body presents. Gently guide the baby's head downward the upward to assist in delivering the baby's shoulders.
- 6) Support the baby throughout the entire delivery. Grasp the feet as they emerge. Once fully delivered, position the baby level with the mother's vagina until the umbilical cord is cut. Note exact time of delivery.
- 7) Position the baby to allow the blood and other fluids to drain from the mouth and nose. Dry and wrap the baby in a clean warm blanket. Only the face should be exposed.
- 8) Assess the baby's breathing. Suction the baby's mouth and nose again. Do not lift the baby by its feet to slap its bottom! If assessment reveals shallow, slow or absent respiration, start artificial ventilation.
- 9) Clamp and cut the umbilical cord when it stops pulsating. Palpate the cord to make sure it is no longer pulsating before clamping. Position the first clamp approximately 25 cm. from the baby; then position the second clamp 8 cm. away from the first clamp, then cut the cord using surgical scissors.
- 10) Record the date, time and place of birth.

— INSTRUCTOR'S COPY

POST-TEST | LESSON 18**Childbirth Emergencies (Cont.)****4. List and describe three complications of pregnancy.*****Excessive pre-birth bleeding***

Can be caused by placenta previa, in which the placenta forms in an abnormal location (low in the uterus and close to or over the cervical opening) that will not allow for a normal delivery. As the cervix dilates, it causes the placenta to tear. Another condition is abruptio placentae, in which the placenta separates from the uterine wall, either partially or entirely. Either type of complication may occur in the third trimester, or both are potentially life-threatening to the mother and foetus.

Spontaneous Abortion

This situation occurs when the foetus and placenta deliver before the 20th week of pregnancy due to natural circumstances, generally before the baby can live on its own. Also called miscarriage.

Ectopic Pregnancy

Pregnancy in which the fertilized egg implants in an oviduct, in the abdominal cavity, or outside the uterus. These areas are not able to contain or support the growing embryo.

POST-TEST | LESSON 18

Childbirth Emergencies (Cont.)

5. List and describe six complications of delivery.

Breech Birth

Most common abnormal delivery. Involves a buttocks-first or both-feet-first delivery. Poses an increased risk or a prolapsed umbilical cord. Whenever possible, the mother should be transported immediately.

Prolapsed Umbilical Cord

The umbilical cord presents first and is squeezed between the vaginal wall and the head of the baby. This may cause oxygen supply to the baby to be totally interrupted. If, upon viewing the vaginal area, you see the umbilical cord presenting, the cord is prolapsed.

Multiple Births

Deliver twins the same way as single babies. Multiple birth is possible if the mother's abdomen is unusually large before, or remains large after, delivery. If labour contractions continue after the first birth (usually within 10 minutes), the next delivery may be imminent.

Premature Birth

A premature infant is one who weighs less than 2.5 kilos (5.5 lbs.) or is born before the 36th week of pregnancy. Make a determination regarding prematurity based on the mother's information and the baby's appearance. The head of a premature baby is proportionately much larger, and the body is smaller and more reddish than a normal baby.

Stillbirth

A situation in which the baby dies in the womb hours, days, or even weeks before birth. Signs of obvious death include the presence of blisters, foul odour, skin or tissue deterioration and discolouration, and a softened head. At other times, the baby may be born in cardiac or pulmonary arrest but may survive with resuscitation.

Limb Presentation

A limb presentation is a situation in which a single leg, an arm and a leg together, or an arm and shoulder, present first. Limb presentations cannot be delivered in the pre-hospital setting. Position the mother on her back with pelvis elevated, provide oxygen per local protocol and transport immediately. If prolapsed cord is present, apply treatment as discussed previously.

LESSON 18

— PPT's

18-1



18-2

OBJECTIVES

Upon completing this lesson,
you will be able to:

- 1 List the eight steps for assessment of the mother.
- 2 List the seven steps for pre-hospital preparation of the mother.
- 3 List the ten steps for delivery of a baby.

PPT 18-2

18-3

OBJECTIVES

Upon completing this lesson,
you will become familiar with:

- 4 List and describe three complications of pregnancy.
- 5 List and describe six complications of delivery.

PIER | MFR | INDIA

PPT 18-3

18-4

OBJECTIVES

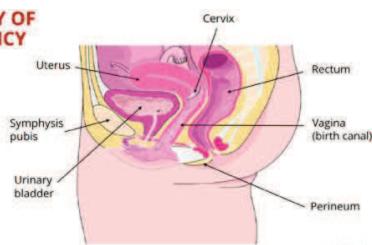
Upon completing this lesson,
you will become familiar with:

- 6 Demonstrate the pre-hospital treatment for a breech presentation and a wrapped umbilical cord around the neck.

PPT 18-4

18-5

ANATOMY OF PREGNANCY

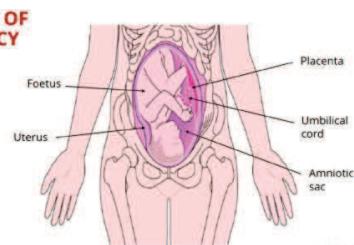


PIER | MFR | INDIA

PPT 18-5

18-6

ANATOMY OF PREGNANCY



PIER | MFR | INDIA

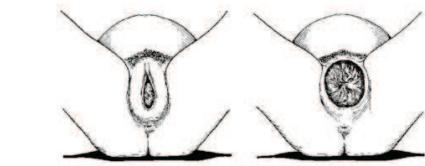
PPT 18-6

LESSON 18

— PPT's

18-7

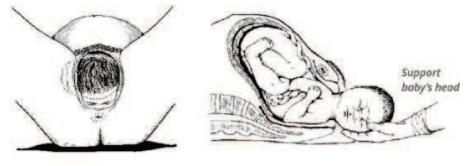
FIRST STAGE OF LABOUR



PPT 18-7

18-8

SECOND STAGE OF LABOUR



PPT 18-8

18-9

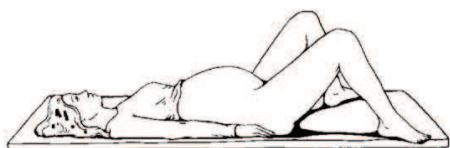
THIRD STAGE OF LABOUR

During this stage, the placenta separates from the uterine wall. It is usually then spontaneously expelled from the uterus.

PPT 18-9

18-10

Patient's position during childbirth



PPT 18-10

18-11

Remove umbilical cord from around baby's neck



PPT 18-11

18-12

Support the baby's head



PPT 18-12

LESSON 18

— PPT's

18-13

Guide the baby's head to assist in delivering shoulders



PEER | MFR | INDIA

18-14

Maintain open airway



PPT 18-14

18-15

Suction newborn's mouth and nose



PEER | MFR | INDIA

18-16

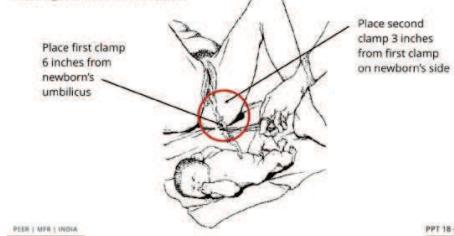
Newborn's position in preparation to cut umbilical cord



PPT 18-15

18-17

Cutting the umbilical cord



PEER | MFR | INDIA

LESSON 18

— FLIP CHARTS

FC18-1



ASSESSMENT OF THE MOTHER

1. Conduct initial assessment
2. Pre-natal care/doctor's information?
3. First pregnancy?
4. Time contractions started?
5. Amniotic sac intact?

FC18-2



→ continued

ASSESSMENT OF THE MOTHER

6. Urge for bowel movement?
7. Determine frequency and duration of contractions
8. Visual evaluation: crowning or bulging
9. Determine if on-site delivery or transport

PEER | MFR | INDIA

More →
FC 18-1

PEER | MFR | INDIA

FC 18-2

FC18-3



COMPLICATIONS OF PREGNANCY

1. Excessive pre-birth bleeding
2. Spontaneous abortion
3. Ectopic pregnancy

FC18-4



COMPLICATIONS OF DELIVERY

- Unbroken amniotic sac
- Breech birth
- Prolapsed umbilical cord
- Limb presentation
- Multiple births
- Premature birth
- Stillbirth

PEER | MFR | INDIA

FC 18-3

PEER | MFR | INDIA

FC 18-4

LESSON 18

— FLIP CHARTS

FC18-5

FC18-6



LESSON 18 STATION 1

Normal Delivery

1. Assess the mother for delivery.
2. Prepare the mother and equipment.
3. Maintain gentle pressure on the infant's head during delivery.
4. Ensure amniotic sac is broken.
5. Suction airway when the head presents.
6. Deliver infant's shoulders and body.
7. Dry off and warm the infant.
8. Assess the infant.
9. Place the clamps and cut the cord.
10. Record the date, time and place of birth.
11. Hand off the infant to the mother.
12. Deliver and inspect the placenta.

PEER | MFR | INDIA

FC 18-5



LESSON 18 STATION 2

Care of the newborn infant

1. Warm and dry the infant.
2. Re-suction the infant's nose and mouth.
3. Stimulate the infant to assist with normal respirations.
4. Assess the infant to obtain an APGAR score.
5. If infant is not breathing, start artificial respirations (40-60 rpm).
6. After 30 seconds, assess heart rate (if less than 100 bpm, continue artificial respirations).
7. After 30 seconds, reassess heart rate (if less than 60 bpm, start CPR).
8. After 30 seconds, reassess the infant.

PEER | MFR | INDIA

FC 18-6

FC18-7

FC18-8



LESSON 18 STATION 3

Breech Birth

1. Position and prepare the mother for normal delivery.
2. Let infant's buttocks and trunk deliver on their own.
3. Place your arm between the infant's legs and support the infant.
4. Place the first and second fingers of your gloved hand alongside the infant's face.
5. Push the vagina away from the infant's face to create an airway.
6. Hold the infant's mouth slightly open with your finger.
7. Continue Steps 4-6 until the infant's head delivers on its own.

PEER | MFR | INDIA

FC 18-7



LESSON 18 STATION 3

Prolapsed Cord

1. Have the mother lie on her left side, knees drawn to her chest.
2. Elevate her hips and legs on a pillow.
3. Administer high-flow oxygen.
4. With a gloved hand, insert several fingers into the mother's vagina and gently push up on the baby's head to keep pressure off the cord (follow local protocols).
5. Maintain Steps 1-4 until the mother is transported to a hospital.
6. Without pushing the cord back into the vagina, cover the cord with a sterile, moist dressing.

PEER | MFR | INDIA

FC 18-8

LESSON 18

— FLIP CHARTS

FC18-9



LESSON 18 STATION 3

Umbilical cord wrapped around the neck

Infant's head presents with the cord wrapped around the neck.

1. Try to slip the cord gently over the infant's shoulders or head.
2. If you cannot do this because the cord is wrapped tightly around the neck, place clamps and cut the cord.
3. Continue delivery maintaining control of the umbilical cord.

FC18-10



LESSON 18 STATION 4

1. Conduct initial assessment.
2. Obtain mother's history:
 - Length of term
 - Number of previous live births
 - Frequency and duration of contractions
 - Any haemorrhaging?
 - Any urge for bowel movement?
3. With permission, examine for crowning.
4. Palpate to determine the strength of contractions.
5. Take vital signs.
6. Determine whether to deliver on-site or transport.

PEER | MFR | INDIA

FC 18-9

PEER | MFR | INDIA

FC 18-10