

Project One: - CPR

Definition: -

- ✚ **C**---**Cardio** which means “**Heart**”
- ✚ **P**---**Pulmonary** which means “**Lung**”
- ✚ **R**---**Resuscitation** which means “**Re-start**”

At once “**Cardio-pulmonary resuscitation**”

CPR: -is the combination of artificial respiration (mouth to mouth) & manual artificial chest compression (circulation) that is recommended for use in cases of **cardiac arrest**.

Purposes:-

- To facilitate/maintain breathing
- To facilitate adequate circulation
- To save life (since CPR is life-saving)

Indication: -

- ✚ cardiac and respiratory arrest

Contra indication:-

- ✚ conscious person
- ✚ mouth infection
- ✚ neck injury
- ✚ chest injury
- ✚ rib fracture#

Types of CPR

- ❖ There are three types of CPR depending on the ages of the patients

These are: -

- A. **Infant CPR**(1month to 12month or under 1year)
- B. **Child CPR**(3 years to 10 years)
- C. **Adult CPR**(15 years up to old ages)

Procedural steps		
Infant CPR	Child CPR	Adult CPR
Check --- Care --- Call	Check --- Call --- Care	Check --- Call --- Care
Check sign of life(Listen, Look & Feel OR(LLF)	Check sign of life(Listen, Look & Feel OR(LLF)	Check sign of life(Listen, Look & Feel OR(LLF)
Mouth and nose at once	Mouth to mouth	Mouth to mouth `
CC by two finger(2)(212 principle)	CC(chest compression) by one	CC by two hands(2) and inter

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	hand (1)(212 principle)	lock each other(212 principle)
5 cycles and the ratio of 2:30 each	5 cycles and the ratio of 2:30 each	5 cycles and the ratio of 2:30 each
Depth of 0.5-1 inches(1.25-2.5cm)	Depth of 1-1.5 inches(2.5-3.75cm)	Depth of 1-2 inches(2.5-5cm)
STOP after end of 5 cycles	STOP after end of 5 cycles	STOP after end of 5 cycles
Tilt the head by small mackintosh or small baby pillow	Tilt the head & lift the chin(Heilmick's maneuver) or (jaw thrust maneuver)	Tilt the head & lift the chin(Heilmick's maneuver) or (jaw thrust maneuver)
Found with mother	Found on field	Found on field
Give with taught left laterally positioning to the mom/ Recovery positioning	left laterally positioning to the mom/ Recovery positioning	left laterally positioning to the mom/ Recovery positioning
On support with leg of provider	On flat surface & supine position	On flat surface & supine position
<i>Our main goal is to sustain OR save the life of the patient</i>		

Note: - tell/call the information for emergency/ first aid service by

- Right provider name & from where by with your clear language
- Right place (market, church, mosque, etc.)
- Right time (e.g. 1:00, 2:00, 6:00 etc.)
- Right type of patient(Infant OR child OR adult)
- Right care given by you

Example: - 911 calling, hello my name is Sr. Lily, from shecha Square of Bekele Molla direction please come a soon to me for one adult injured by car accident and can be unconscious for 3mins after at 3:00 , I give immediately give to him a bleeding control by tie with cloth of him. THANKS!!!

Complications of CPR

- ✚ Complication is through bidirectional
- A. Through from the cause** (life threatening condition) e.g. disease, trauma, accidents etc.
- B. Through from the management** (ineffective life-saving way/condition) e.g. rib # when CC forcefully induced, abdominal distension when mouth to mouth over ventilation...etc.

Management after CPR

- Mgt after CPR seen as bidirectional
- A. After normal progress**
 - ❖ Recovery positioning (dual purpose)
 - ❖ Give to mother if infant
- B. After hazardous/bad progress**
 - Re- management of rib # mgt
 - Re- management of Neck injury

WHEN TO STOP CPR

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- o After end of 5 cycles
- o When patient died
- o When there is normal progress for patient
- o After exhaustions of first aider or management provider
- o When emergency arrival /ambulance

OR by abbreviation

S-----Spontaneously breathing

T-----Turn over

O----Over exhaustions

P-----Physical arrival

COC Questions related with CPR

1. What is CPR? = *is a combination of arteficial ventilation & arteficial manual chest compression when cardiac arrest occur.*
2. "CPR" stands for? = C= cardio or "*Heart*", P= pulmonary or "*Lung*", R=resuscitation or "*Re-start*"
3. What is the purpose/benefit/importance of CPR? = *to save life, to facilitate breathing & to facilitate circulation.*
4. Indication & contra indication for CPR? = *when cardiac arrest occur*
5. How do you assess the patient before induce CPR? = *by assessing by the sign of life methods or LLF(Look =chest movement, Listen=hot or cold air & Feel=pulse)*
6. What is the ratio for CPR? = *2 ratio 30 or 2:30 means 2 rescue breath or mouth to mouth used to breath & 30 chest compression used to stimulate pulse*
7. How many cycles for CPR have? = *5 cycles*
8. What does each cycle mean? = *2 rescue breath & 30 chest compression*
9. What are the complications regarding with CPR? = *rib #, liver damage, vomiting & aspiration pneumonia*
10. Three (3"C") stands for? = *(check, care, call) for infant & (check, call, care) for adult & child*
11. When you stop CPR? = *when pt died, breathing start, if exhausted & emrgency support arrival*
12. Methods of open the airway are? = *by tilt the head & chin lift if patient neck is normal*
13. How do you open the airway if the patient have neck injury? = *by jaw thrust maneuver*
14. CPR is on flat surface by supine positioning YES/NO? Why? = *yes, because to be prevent movement & to give effective chest compression*
15. What is the difference between Infant, Child & Adult CPR? =

Case CPR procedural based exam and question

Project One: - A 26 years old male patient who is a Sinotruk car driver come to in your emergency department after suffering of strangulated by foreign body(Raw meat) during your assessment he has not breathing and circulation.-----30minutes

Question 1. what type of CPR do you perform?

Question 2. What is the cause?

Question 3 . Type of cause is ----- A. mechanical B. anatomical C. air depleted

❖ **Task 1-** Manage choking

❖ **Task 2-** Perform CPR

Project Two: - Bleeding control

Definition: -

What is bleeding?

✓ **Bleeding** is the flow of blood from different parts of the body's blood vessels.

What are the sites of bleeding?

✓ **These are**

-Artery

-Vein

-Capillaries

✓ **Control** is the way of managing or stopping or handling the certain things/objects
So, **bleeding control** is the way managing/stopping OR handling the flow of blood from different parts of the body's blood vessels.

What are the cause of bleeding?

Causes of bleeding

- ◇ Accidents
- ◇ Falling down
- ◇ Fracture #
- ◇ Burns
- ◇ Trauma
- ◇ Different types of animal bites
- ◇ Certain sharp material object cut.

What are the purposes of bleeding control?

Purposes of bleeding control

- ◆ To save life(since bleeding is life threatening condition)
- ◆ To stop bleeding
- ◆ To maintain health
- ◆ To prevent certain related problems (shock. Anemia, stroke....)

What are the types of bleeding?

Types of bleeding

- ◇ There are two types of bleeding

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- Internal bleeding
- external bleeding

<i>Internal bleeding</i>	<i>External bleeding</i>
<i>Bleeding is not seen by our necked eyes</i>	<i>Bleeding seen by our necked eyes(visible)</i>
<i>Have not skin breakdown</i>	<i>Have skin breakdown</i>
<i>Have no protrude of organ to outward</i>	<i>Have protrude of organ to outward e.g. bone</i>
<i>Leads to severe damage e.g intra cranial hemorrhage and stroke, even death</i>	<i>Leads to hypovolemic shock & even death</i>
<i>Very difficult to manage without know its cause by physician</i>	<i>Very easy by managing effective bleeding control management steps by Nurses</i>
<i>Our main goal is to sustain OR save the life of the patient</i>	

Sites for bleeding

- ✓ There are three sites for bleeding from different blood vessels
 - artery
 - vein
 - capillary's

<i>Arterial bleeding</i>	<i>Venous bleeding</i>	<i>Capillary bleeding</i>
<i>Is oxygenated bleeding</i>	<i>Is deoxygenated bleeding</i>	<i>The same to vein</i>
<i>Bleeding from artery & very high</i>	<i>Bleeding from vein & slowly</i>	<i>Bleeding from capillary</i>
<i>Is bright red type of blood due to presence of oxygen</i>	<i>Is dark red type of blood due to absence of oxygen</i>	<i>Is oozing type of blood</i>
<i>Due to severe problems related to artery injury e. g. cutting, surgery</i>	<i>Due to severe problems related to vein injury e.g. cutting and due to different Laboratory tests</i>	<i>Due to capillary puncture e.g. during tests of PITC, VCT to HIV/AIDS status testing</i>
<i>Very difficult to manage without know its cause by physician</i>	<i>Very easy by managing effective bleeding control management steps by Nurses</i>	<i>The same as vein</i>
<i>Leads to anemia, stroke ,hypoglycemia, hypothermia and others disorders even death</i>		
<i>Our main goal is to sustain OR save the life of the patient</i>		

Procedural steps of bleeding control

- ✓ Applying direct pressure on the affected/injured part
- ✓ Elevate, raise & supporting the affected/injured part above the heart level
- ✓ Applying indirect pressure above the affected/injured part on the surrounding blood vessel
- ✓ Applying tourniquet above the bleeding part on surrounding blood vessel if the bleeding is very high and monitor every 5-10 minutes until seek to health care
- ✓ Applying cold compress above the bleeding part on surrounding blood vessel if necessary since cold compress needs to vasoconstriction (constricting blood vessels).

- **A***pply direct pressure on the site of the injury*
- **E***levate ,raise & support at the level of the heart*
- **I***ndirect pressure above the injured part on the bleeding blood vessel*
- **T***ourniquet if it is highly profuse(that threat life of pt's) & monitor repeat the frequency for 10-15mins until reach health facility*

Complications of the management

- ✚ Complication is through bidirectional
- C. Through from the cause (life threatening condition) e.g. disease, trauma, accidents etc.
- D. Through from the management (ineffective life-saving way/condition)

What are the complications of bleeding?

Complication from cause

- ✓ **Death**
- ✓ **Hypoglycaemia**
- ✓ **Hypothermia**
- ✓ **Shock(hypovolemic shock)**
- ✓ **Stroke.....etc.**

Complication from ineffective management

- ◇ **Gas gangrene from unmonitored tourniquet**
- ◇ **Sepsis(blood infection) due to unsafe/unclean procedure**
- ◇ **Death ...etc.**

Project Three: - Infection Prevention/control

Definition: - is the process of preventing the infection transmitting methods from different modes of infection transmitting cycles.

Purposes: -

- **To improve health**
- **To reduce the multiplication of microorganisms**

Methods of IP

- By hand washing (by soapy water & alcohol rub hand washing)
- By Instrumental processing methods (Decontamination, Cleaning, HLD & sterilization)
- Waste handling

Instrument Processing and Handling

Definition: - is the process of giving care for used equipment's

Purposes: -

- To keep the status/care of equipment's
- To hinder/reduce the multiplication of bacteria
- To prevent infection prevention
- To safe before use the materials

Instrumental processing procedural steps

1. Decontamination

- Is the process of eliminating/removing the number of mos but not kill by (soaking in 0.9% chlorine bleach solution or berekina for 10 minutes)

$$\text{Total Parts (TP) water} = \left[\frac{\% \text{ Concentrate}}{\% \text{ Dilute}} \right] - 1$$

Example: Make a

dilute solution (0.5 percent) from 5 percent concentrated solution.

Step 1: Calculate TP water

$$\left[\frac{5.0\%}{0.5\%} \right] - 1 = 10 - 1 = 9$$

2. Cleaning

- Is the process of washing by water based solutions until dirty removed
- There are two types of cleaning
 - A. Cleaning only by clean water without soap solution which removes bacteria 50%
 - B. Cleaning by soap solution water which removes bacteria around 85%

3. High Level Disinfection

- ✦ Is the process of eliminating as well as removing the number of mos except, spore forming's
- ✦ By chemicals (formaldehyde, gluteraldehyde)
- ✦ Used by different methods (boiling, steaming)

4. Sterilization

- ✦ The process of removing & eliminating all types of bacteria including spore forming's

COC Based Training

✦ Uses autoclave

The most common and readily available sterilization methods are:

- ✦ High-pressure steam sterilization (autoclaves)
- ✦ Dry heat sterilization (oven)
- ✦ Chemical sterilization

The effect of Sterilization depends on

- Time (if packed 30minutes & not packed 20minutes)
- Temperature(121”c)
- Pressure (106kpa)

Color Indicators for autoclave functioning on autoclave

Green color: - represents the ongoing step of sterilizing

Yellow color: - represents the target point of sterilizing equipment

Red color: -represents loose of functionality of equipment & autoclave

Waste handling

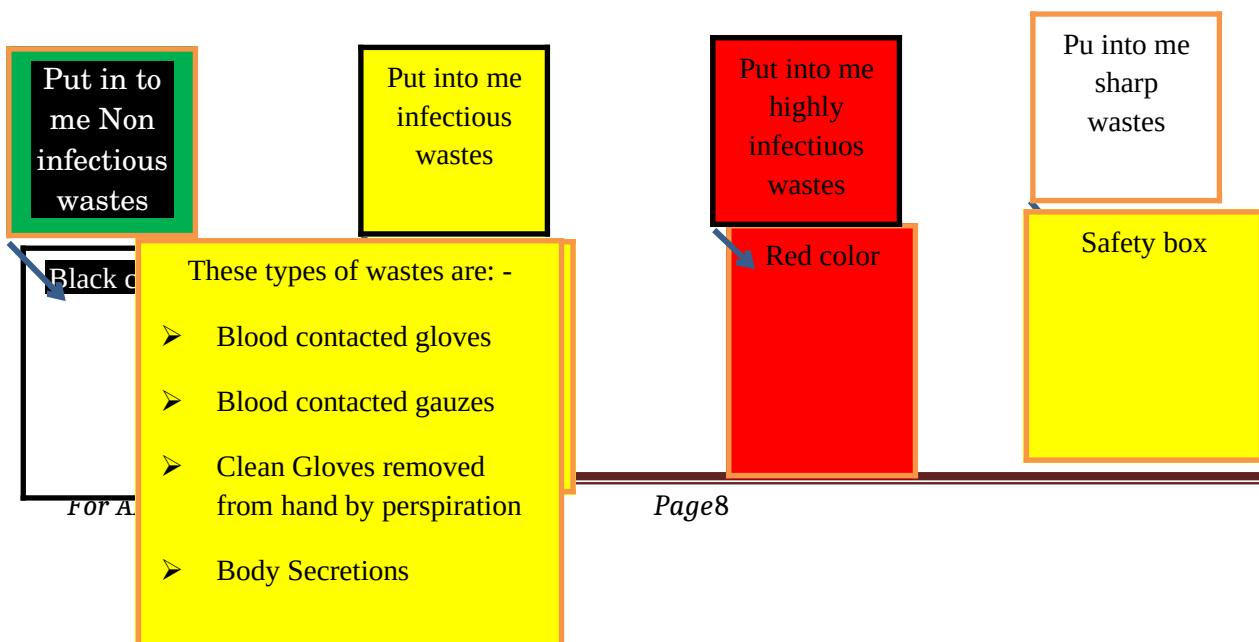
Definition: - removing wastes from instruments

- To keep the status/care of equipment's
- To hinder/reduce the multiplication of bacteria
- To prevent infection prevention
- o To safe before use the materials

There are four types of wastes

- noninfectious wastes
- Infectious wastes
- Highly infectious waste
- Sharp wastes

Three types of color code systems



COC Based Training

These type of wastes are: -

- ❖ Glove packs
- ❖ Syringe packs

Paper pieces

These types of wastes are:

- ✓ Blood
- ✓ Body secretions
- ✓ Blood contacted gloves

These types of wastes are: -

- Piece of glasses
- Blade
- Used syringes
- Piece of ampules

Project Four: - Bed making

Definition: - Bed is the place where a person can take rest

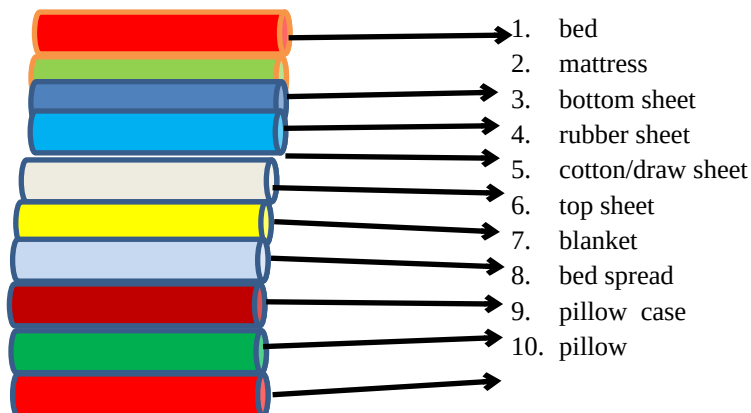
Purpose: -

- to take rest
- to recovery from infection

Types of bed making

- ✚ **open bed making**-----for ambulatory patients
- ✚ **closed bed making**----- for new patients
- ✚ **occupied bed making**-----for weak/bed ridden patients who live on bed
- ✚ **cardiac bed making**-----for a patients with heart problem
- ✚ **anesthetic bed (post-operative bed) making**-----for patient after surgery room in ICU, has no pillow
- ✚ **amputation bed making**-----for a patients with amputation
- ✚ **fractured bed making**-----for a patients with fracture

Equipment orders in every bed making



Project 5: - Monitoring vital signs

COC Based Training

Definition: - are the cardinal signs that indicate the normal and abnormal body functions.

What are the components of v/s?

Components of v/s steps order....T, P, R, BP

1. Temperature(T)

2. Pulse Rate(PR)

3. Respiration Rate(RR)

4. Blood Pressure(BP)

1. Temperature

- The balance between hot ness or cold ness of the body
- The instrument used to monitor temperature is **Thermometer** (digital, mercury)
- Units of temperature is (Celsius, Fahrenheit, Kelvin)

Sites/Routes of monitoring temperature

- ◇ Oral
- ◇ Auxiliary is **most common for adult**
- ◇ Rectal is **most common for infant**
- ◇ Tympanic (ear)

Readings for temperature

- Range (36.5-37.5)
- Normal (between 36.5 and 37.5)
- Average $(36.5 + 37.5)/2 = 74/2 = 37$
- Below or <36.5 is **hypothermia**(coldness)
- Above or >37.5 is **hyperthermia**(hotness) or Fever
- >38 is pyrexia
- >41 is hyper pyrexia
- >42 is death &
- <34 is death

Types of fever

- ✚ Intermittent fever
- ✚ Remittent fever
- ✚ Continues fever
- ✚ Relapsing fever

2.Pulse Rate

- ❖ is the heart beat
- ❖ it monitors for minutes called **beat/minute or BPM**

Sites/Routes of monitoring temperature

- ✚ temporal pulse
- ✚ facial pulse
- ✚ carotid pulse
- ✚ **apical pulse is common for infant** measuring by stethoscope
- ✚ radial pulse is the best during monitoring blood pressure
- ✚ **brachial pulse is common for adult** measuring
- ✚ femoral pulse
- ✚ tibial pulse
- ✚ popliteal pulse
- ✚ dorso popliteal pulse

Readings for temperature

- ❖ **Range** (60-100BPM)
- ❖ **Normal** (between 60 & 100 BPM)
- ❖ **Average** $(60 + 100)/2 = 80\text{bpm}$
- ❖ Below or $<60\text{bpm}$ is **bradycardia**
- ❖ **Above** or $>100\text{bpm}$ is **tachycardia**

3. Respiration Rate (RR)

- Is the intake & out of air
- Exchange of air in to the lung
- Monitoring by observing the chest during **inspiration & expiration**
- it monitors for minutes called **breath/minute or BPM**

Sites/route of RR

- chest

Readings for temperature

COC Based Training

- ❖ **Range (12-20BPM)**
- ❖ Normal (between 12 & 20 BPM)
- ❖ Average $(12 + 20)/2 = 16$ bpm
- ❖ Below or <12 bpm is bradypnea
- ❖ Above or >20 bpm is tachypnea
- ❖ Normal or true respiration is **eupnoea**
- ❖ Temporary absence of respiration is **apnea**

4. Blood pressure

- ❖ Is the force of blood during circulation
- ❖ Measured by BP cuff apparatus & stethoscope
- ❖ Normal pulse site is radial pulse & around thigh area
- ❖ Normal heart sound is “Lub-dub”
- ❖ Measured by **milli meter mercury(mmHg)**

Readings for temperature

- ❖ **Range**(systolic 100-140mmHg) and (diastolic 60-100mmHg)
- ❖ Normal (systolic between 100-140mmHg) and (diastolic between 60-100mmHg)
- ❖ Average(systolic $100 + 140\text{mmHg}/2 = 120\text{mmHg}$ or (Diastolic $60+100\text{mmHg}/2= 80\text{mmHg}$
OR overall **120/80mmHg**
- ❖ Below or <60 mmHg is **hypotension**
- ❖ Above or >140 mmHg is **hypertension**