**Module Eight Assignment**

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1. **Define First aid? Why is it important for public health practitioner to have first aid skills?**

First Aid is an emergency care or treatment given to a sick or injured person before an advanced medical assistance in term of an emergency medical services arrives. The primary focus of first aid training is to provide you with the skills and knowledge necessary, to minimize the effects of accidents or illnesses. The following are the importance of the first aid training.

Helps to save life. A Trained person is more reliable, confident and in control of themselves when an emergency arises. People who are trained are more likely to take immediate action in an emergency situation.

It allows the rescuers to provide the victims comfort. Having someone trained in first aid can bring immediate relief to the patient. Being calm and assisting the situation helps the patient relax while their injures are being treated and stabilized until emergency personnel arrives

It gives one tools to prevent the situation from becoming worse. In some situation of a patient doesn’t receive basic first aid care immediately their situation will deteriorate often rapidly. By being able to provide basic first aid care, one can stabilize a patient until emergency medical services arrive. One learns how to use basic household items as tools if a first aid kit is not available meaning that one will be able to cope with many situations.

It provides skills and knowledge of collecting information and data about what happened and the patient condition. This information will be passed on to the emergency services to save them time. First aiders are valuable link in the chain of survival.

It creates the confidence to care. Having a basic first aid knowledge means that you will be confident in your skills and abilities in relation to first aid administration. By taking first aid training it helps you reflect on yourself and how you and other react in certain situation. Having first aid knowledge will boost your confidence a wide range of non-medical day to day situation.

It encourages healthy and safe living. A trained person is better able to assess their surroundings. Knowledge of first aid promotes the sense of safety and well-being amongst people. Having awareness and desire to be accident free keeps you safer and reduces the number of causalities and accidents.

1. **Explain in details, the four responsibilities of a first aider?**

The primary aim of first aiders is save lives of the injured or sick victims while protecting themselves from danger and contamination with highly infectious materials like the blood and fluid from the victims through wearing of personal protective gears. Thus, the four responsibilities of first aiders include; preservation of life, protection of the unconscious, prevention of the causalities from worsening and promotion of recovery of the causality.

Preservation of life. First aiders provide immediate potentially lifesaving, medical care, before arrival of further medical help. This include; placing an unconscious casualty into recovery stable side position, performing cardiopulmonary resuscitation, using an automated external defibrillator, stopping bleeding using pressure and evaluation and keeping fractured limbs still and supported.

Protection of the Unconscious. The first aiders goal is to protect the unconscious casualties by assessing and discovering the nature and causes of their injures and the illnesses. Also, ensuring the safety of unconscious casualty by moving them away from the scene if there is threat or danger to their lives.

Prevention of the casualties’ condition from worsening. The first aiders ensure that the casualties who have recovery are closely monitored by taking the vital signs to prevent deterioration of their condition and arrange for immediate transfer of the victims to the hospital by ambulance. This is usually achieved by activating and contacting the emergency medical service team through phone call.

Promotion of recovery of the casualty. While waiting for the arrival of the advance team, as first aiders used the skills and knowledge learned on first aid to promote recovery of the casualty or the ill victims, this is achieved by performing life-saving interventions like choking maneuvers, clearing of the airways, chest compression, rescue breathing, use of automated external defibrillators, external compression of the perfuse bleeding wounds and splinting of fractures. (First aid; Module eight notes pages 2 and Preserve prevent promote, by Bill Casserley October 2017; train-aid.co.uk/blog/preserve-prevent-promote).

1. **Explain the universal precautions expected of one before engaging in rescue mission as a first Aider.**

Universal precautions are referred to as risk management strategy used to prevent the transmission of communicable disease, by reducing the contact with blood and other bodily fluids. These strategies include the following;

Treat all blood and bodily fluids spills as if they were infectious, and take immediate action if there is any spill on the skin, mucus membranes wash out with water for 15 minutes.

Wear appropriate personal protective equipment, such as gloves, aprons, goggles, facial masks for a task. When performing CPR, always use a mask equipped with one-way valve to prevent contact with potentially infectious body fluids.

When removing contaminated clothing, carefully turn all items inside out as they are removed to contain the contaminants. Contain spills immediate, clean up and disinfect the area.

Appropriate disposal of disposable contaminated items and equipment in appropriate labelled containers. Handle all trash with caution- as though it contains sharps and infectious items.

Washing following completion of task. After removing the personal protective equipment, vigorously wash hands or other affected body parts with soap and water. if soap is available use hand sanitizer or sanitizing wipes.

Maintain good hygiene practices before, during and after tasks involving contamination risk. This involves hand washing with soap and water before and after performing a task, wearing of gloves to prevent contamination and cross infections and immediate disinfection of any spills of blood or fluids.

Prepare for immediate action at the scene following exposure to contaminants, such as cut with contaminated sharps, spills of blood and body fluid into mucus membranes and skill. By encouraging bleeding for open wound and wash with water and address, flush splashes into nose, eyes and mouths thoroughly with water for 15 minutes.

1. **As a public health practitioner, explain how you can execute cardiopulmonary resuscitation first Aid experience?**

Cardiopulmonary resuscitation is a repetitive cycle of airway opening, chest compression and rescue breathing.

**Airway opening: Finger sweep:** Open the mouth of the casualty and look for any foreign body. Used the gloved finger sweep to clear the mouth of fluid and debris in the unresponsive casualty. It should only be performed if you can see something to remove. Positioned the casualty on their side in a stable side position. Insert your first finger into the high side of the casualty’s mouth and perform a single sweeping motion to the opposite side, flicking out vomit, blood, and debris.

**Head tilt and chin lift:** One hand is placed on the forehead or the top of the head. The other hand is used to provide Chin Lift. The head is tilted backwards without placing your hand under the neck, avoid excessive force, especially where neck injury is suspected. Chin lift is commonly used in conjunction with Backward Head Tilt. The chin is held up by the rescuer’s thumb and fingers in order to open the mouth. place the thumb over the chin below the lip and supporting the tip of the jaw with the middle finger and the index finger lying along the jaw line. Care is required to prevent the ring finger from compressing the soft tissues of the neck. The jaw is held open slightly and pulled away from the chest.

**Chest compression:** Chest compression is initiated in an unresponsiveness and absence of normal breathing the casualty shows no sign of life such as movement, breathing or coughing. Chest compression can be performed by two hand techniques (adults), one hand techniques (child under 8 years of age) and two finger techniques (Infant).

Lay the patient on their back on any flat, hard surface available. protect the neck and head by avoiding unnecessary movement, if it looks like there is suspicion of spinal injury.

Kneel down next to their shoulders so that your torso is over their chest.

Place the palm and heel of one hand on the lower half of the sternum, in the center of the chest and the other hand directly on the top with interlocking fingers. For an infant place two fingers on the center of the chest on lower half of the sternum. Keep your elbows straight, kneel up to bring your shoulders up over your hands for more strength in your upper body.

Using the weight and force from your upper body, depress straight down on the chest to depth of 5 cm in adult, approximately 5cm in children and 4cm in infant and release the pressure. Perform 30 compression at rate of 100/minutes and two rescue breaths. Compressions should be rhythmic with equal time for compression and relaxation.

When performing chest compression, change rescuers at-least every two minutes to prevent rescuers fatigue and deterioration in chest compression quality. This should be done with minimal interruption of the compression.

After every two minutes of chest compression, reassess for signs of life such as breathing, coughing and movement. if the victim begins to show signs of life reassess the breathing immediately. If the casualty is breathing normally place on stable side position.

**Rescue breathing (Mouth to Mouth ventilation)**: Kneel beside the victim’s head. Maintain an open airway. Use resuscitation barrier devise. Take a breath, open your mouth as widely as possible and place it over the victim’s slightly open mouth. Whilst maintaining an open airway pinch the nostrils (or seal nostrils with rescuer’s cheek) and blow to inflate the victim’s lungs. lift your mouth from the victim's mouth, turn your head towards the victim’s chest and listen and feel for air being exhaled from the mouth and nose

Care should be taken to avoid over inflating the victim’s lungs, look for rise of the victim’s chest whilst inflating. If the chest does not rise, possible causes are: Obstruction in the airway (inadequate head tilt, chin lift, tongue or foreign body), Insufficient air being blown into the lungs, Inadequate air seal around mouth and or nose. ensure correct head tilt, adequate air seal and ventilation. Continue till the victim can breathing normally on their own.

1. **Explain briefly the first aid process in the following processes**
2. **An open fracture**.

An open fracture is a type of fracture in which broken bone ends punctured the skin. The following are the steps as first aider to undertake when managing a causality with open fracture.

* Carry out primary survey. Do immediate primary assessment of the causality by DRS ABCD, asses for danger around the scene, check for the victim responsive, send for help by calling EMS. Assess for airway, breathing, circulation or perform cardiopulmonary resuscitation and apply external defibrillator.
* Seek for immediate medical attention since open fracture requires emergency medical intervention to avert wound and bone infection. Call for emergency medical service and arrange for immediate evacuation of the victims to the hospital.
* Stop any bleeding. Apply sterilized gauge to cover the wound and control any bleeding using direct pressure or elevation of the limb.
* Immobilized the injured limb. Minimized unnecessary movement of the limb, unless for safety reason. Immobilized the limb using anything at hand, to do so, example pillows, magazines or dressing to support the limb.
* Monitor the patient. If there is significant loss of blood, signs of shock may develop, so check for circulation below the fracture site, this involves feeling for present of peripheral pulses.
* Carry out secondary assessment, this involves thorough checking head-to-toe (down front and back) for any other injuries. Use the questioning techniques PQRST, SAMPLE and records the vital signs and other information to help the advance team in the management of casualty.
* Rest and reassure the casualty of their safety and of his injuries.

1. **A closed fracture**

A closed fracture is the type of fracture in which the surrounding skin over the bone is intact, that is the broken bone ends do not puncture the skin overlying. The following are the steps as first aider to undertake when managing a causality with closed fracture.

* Carry out primary survey. Do immediate primary assessment of the causality by DRS ABCD, assess for danger around the scene, check for responsive, send for help, assess airway, breathing, circulation or perform CPR or defibrate the victim.
* Seek for immediate medical attention since closed fracture requires emergency medical interventions to avert any kinking or rupture of the blood vessels by broken sharp ends of the bone. Call for emergency medical service and arrange for immediate evacuation of the victims to the hospital.
* Apply ice packs to the fractured limb to relief pain and swelling, this usually reduces the hotness and redness around the site of fracture and hence relief pain and swelling.
* Immobilized the injured limb. Minimized unnecessary movement of the limb, unless for safety reason. Immobilized the limb using anything at hand, to do so, example pillows, magazines or dressing to support the limb.
* Monitor the patient. If there is loss of significant amount of blood, signs of shock may develop, so check for circulation below the fracture site, this involves feeling for present of peripheral pulses.
* Carry out secondary assessment, this involves thorough check head-to-toe (down front and back) for any other injuries. Use the questioning techniques PQRST, SAMPLE and records the vital signs and other information to help the advance team in the management of casualty.
* Rest and reassure the casualty of their safety and of the injuries.

1. **Poisoning by ingestion**

Poisoning may be accidental or deliberate. All precautionsmust be taken for safety as you may be unaware of any inherent risks created by the casualty. These risks involve rescuing the casualty and any subsequent resuscitation attempts. Cautionmust be observed when any resuscitation attempt is required. If in doubt do notcommence resuscitation. as you can be poisoned from what casualty has ingested.The goldenrule your safety is paramount, if in doubt move back to a safe point and request assistance.

* Carry out primary assessment, DRS ABCD (consider compression only CPR if risk of cross contamination). Removing anything remaining in the victim’s mouth if the suspected poison is a household cleaner or other chemical.
* If unresponsive and breathing is adequate, place the casualty in a stable side position. If the victim is not showing signs of life such as breathing, coughing and movement, begin CPR.
* Do notinduce vomiting, unless instructed to do so from National Poisons Centre.
* Give Water or milk only to casualties if have swallowed corrosive substances (always follow instructions from National Poisons Centre).
* Carry out secondary assessment. Try to find out what has been taken, how much and when. Contact national Poisons Centre for advice. Keep any containers of chemicals or medication found to show to the ambulance paramedics
* Rest and reassure

1. **Unconscious victim**

Unconscious Victim is a casualty who is in a “state of unresponsiveness, where he or she cannot be roused, is unaware of his or her surroundings and no purposeful response can be obtained” (PGD Module eight note page).

* Carry out immediate primary assessment of the victim by following DRS ABCD, asses for danger around the scene, check for the victim responsive using VUPU, send for help by calling for advance emergency medical team. Assess the airway, using finger sweep to remove any foreign bodies, breathing and circulation.
* Seek for immediate medical services by calling for emergency medical services and arranging for transportation of the victims to the hospital.
* If the victim is breathing normally, but with suspected spinal injury, leave them as they are, take measures to keep their neck supported and still. If not suspicion of spinal injury place them in stable side position. Kneel beside the casualty and check the casualty’s pockets for anything that could injure them during the procedure. Roll the casualty toward you, pulling from the casualty’s hip and shoulder. Once the casualty is on their side, tilt their head back to ensure an open airway. Move the casualty’s uppermost knee to a position approximately 90° from their torso. Move the casualty’s uppermost arm to a position approximately 90° from their torso.
* Carry out secondary assessment and while waiting for emergency medical service and transport of the victims to hospital for advance medical attending.
* Continue monitoring breathing and make sure that the airway is still clear and open while waiting for the emergency medical service or transport to the hospital.

1. **Spinal injury**

Spinal injuries are caused by traumatic forces on the body. The majority of spinal injuries involve the ligaments in the spine; this will cause pain but does not generally cause serious disability. More serious spinal injuries occur when the vertebrae shift, causing damage to the spinal cord with subsequence paralysis or death (PGD Module eight note). The following symptoms and signs may indicate spinal injury; Pain in the injured area, Numbness and tingling, Loss of feeling or weakness in parts of the body, Loss of feeling or sensation, Priapism in males (unwanted, uncontrolled erection), Loss of bladder control and Altered level of consciousness.

* Keep the person still. Support head and neck to prevent movement. The goal of first aid for a suspected spinal injury is to keep the person in the same position as he or she was found.
* Carry out primary assessment, DRS ABCD
* Seek immediate medical attention, call for emergency medical service and transport to the hospital.
* If unresponsive and breathing is adequate, consider placing the casualty in the recovery position. If unresponsive and not breathing consider performing CPR while provide support to the neck and head.
* Movement of the victim, when moving the person because he or she is vomiting, choking on blood or in danger of further injury, you need at least one other person. With one of you at the head and another along the side of the injured person, work together to keep the person's head, neck and back aligned while rolling the person onto one side.
* Undertake a secondary assessment and continue monitoring the victim for any sign distortion in breathing while waiting for the emergency medical team or transport to hospital.
* Rest and reassure

1. **As a first aider, how will you manage the following conditions**
2. **Asthma**

Asthma is “chronic disease in which the person’s airways become inflamed, narrowed and swollen with excess secretion of mucus blocking the airways and creating difficulty in breathing” (Mayo clinic). Asthma affects lower airways and can be mild, severe or life threatening called status asthmaticus. It is usually exacerbated by Upper respiratory tract infection, dust mites faeces, pollen & moulds, changes in air temperature, Exercise, stress, animal dander (skin flakes / feathers), certain foods and preservatives. Someone with asthma may experience the following symptoms and signs: Shortness of breath, cyanosis (blue tinge to the skin), wheezing or other noises during breathing, difficulty in speaking, difficulty breathing, sitting upright, using their arms to brace their body Anxiety and distress

The steps for the management of asthma casualties are:

* Carry out primary assessment, DRS ABCD
* Seek immediate medical attention, call emergency medical service.
* Position the casualty sitting upright (leaning forward / supported).
* If the casualty has **their** medication, assist them in following their asthma plan.
* Reassure casualty
* Carry out secondary assessment.
* If casualty becomes unresponsive and stops breathing adequately follow DRS ABCD and commence CPR

1. **Stroke**

A stroke is the ‘’loss of brain function that occurs due to a disruption in the blood vessels supplying blood to the brain” (Mayo clinic). This can occur as result of either a clot blocks an artery supplying blood to the brain (80% of strokes) or an artery in the brain ruptures. The victims of stroke normally experience the following symptoms and signs; Sudden weakness and/or numbness of the face, the arms, or the legs, especially on one side of the body, difficulty in understanding speech or speaking, loss of vision, confusion, loss of movement control or balance, Severe headache, loss of bladder control and unresponsiveness. If you suspected someone has stroke perform the following:

Apply the **F.A.S.T.** diagnostic tool:

* **F** - Face- does the face look uneven
* **A - A**rm - does one arm drift down when both at equal positions
* **S - S**peech - does their speech sound different
* **T - T**ime - Call for an ambulance immediately. Time is of importance in treating the casualty with advanced care and drugs.

Management of a responsivestroke casualty is:

* Carry out primary assessment, DRS ABCD
* Seek immediate medical attention.
* Lay casualty down with their head raised.
* Loosen any tight clothing.
* Reassure the casualty.
* Gain the casualty’s history through **SAMPLE** questioning.

Management of an unresponsivestroke casualty is:

* Carry out primary assessment, DRS ABCD
* Seek immediate medical attention
* If unresponsive and breathing is adequate, place the casualty in a stable side position
* Loosen any tight clothing
* Undertake the secondary assessment
* Be prepared for the deterioration of the casualty’s condition, follow DRS ABCD (CPR and AED)

**Do not** allow the use of any type of aspirin, as this may have detrimental effects on the casualty if they are bleeding in the brain as a consequence of a stroke.

1. **Heart attack**

Heart attack is also called myocardial infarction. It is a medical emergency and occurs when a “blood clot blocks blood flow to the cardiac muscle resulting into sudden loss of oxygen supplies to the muscle and death of the muscle” (Mayo clinic). A casualty experiencing a heart attack may display one or more of the following signs and symptoms: Sweating, Pain or discomfort in the chest, arms, jaw, neck, or teeth; normally described as squeezing, tightness, or a crushing pain, Pallor or the skin, Nausea, Shortness of breath, Sense of impending doom. When a heart attack occurs, the below are steps for managing the victim:

* Carry out primary assessment, DRS ABCD
* Seek immediate medical attention, call emergency medical service and arrange for the transportation of the victim to hospital.
* If unresponsive and breathing is adequate, place the casualty in a stable side position Have the casualty stopall physical activity, and any unnecessary movement.
* Place them in a comfortable position if conscious, normally the sitting position as it is easier to breath
* If the casualty has theirmedication, assist them in following their cardiac plan
* Loosen any tight clothing
* If the person becomes unconscious, prepare for potential cardiac arrest follow DRS ABCD (CPR and AED).
* Carry out secondary assessment
* Rest and reassure

Medication

If a casualty experiences chest pain, ascertain if they are carrying their prescribed medication e.g. **Nitro-lingual spray or aspirin**, suggest that the casualty take their medication, or assist them to self-administer it.

1. **Is there need for continued research in public health? Support your answer with appropriate examples.**

The knowledge and tools available are not always adequate to tackle existing health problems and there is a constant and never-ending need to generate new information and develop improved and more effective ways of protecting and promoting health and of reducing disease why health research, Carl IJsselmuiden and Stephen Matlin).

Growing threat of microbiological resistance in medical field, in diseases such TB and Malaria. With emerging of HIV/AIDS, the mycobacteria tuberculosis has undergone mutation thus a resistance stain of the bacteria has emerged that cannot be killed by the available antibiotic hence there is need for continue research in the field of drugs to cub the threat.

Lack of effective drugs for treatment of some neglected tropical disease in low in-come countries such as Dengue fever which is killing large number of people and yet there is no cure. Thus, there is need for research to established the treatment for Dengue fever.

There is need for continue research to establish new knowledge about the local context, condition and health priorities of an areas to understanding the factor influence endemic disease occurrence.

Need for new knowledge about global factors that influence health of human and animals, this include, ways to tackle global warming and impact of globalization in influencing spread of recent emerging diseases such as Ebola.

There is need for continue research as a measure of preparedness for the emerging epidemic and pandemic disease, which have no treatment yet, such as Ebola and severe acute respiratory syndrome.

HIV/AIDS remain a threat to global health and yet no single cure has been developed to treat the disease though there are drugs in existence that can prolong the life of an individual. Therefore, is need to continue research in the area of HIV/AIDS to establish a cure.

Need to develop new knowledge about social, political, economic and environmental determinants of health, especially in understanding how to increase equity within and between countries.

Need to understand and monitor impacts of global policies on trade and globalization on the health of individual, family community and country.

Research on environmental health, the interaction between economic activity, environmental and human health which is of more and more pertinence to developing countries.

Need for research to create new knowledge and technologies and to translate these into effective interventions that will enable people to be healthy everywhere.

Need to understand how to best use research not only for health improvement but also for social and economic development in an equitable manner.

1. **As a public health practitioner, what are some of the challenges in your county within the health sector in terms of research?**

The biggest obstacle to the development of research in higher education is the means for generating knowledge and the ability to translate that knowledge into actionable ideas for the nation’s development. How much public officials consume research products and base decisions on them is not well-established.

Enabling environment for the production of knowledge. There is no credible commitment to facilitate this production, as evidenced by lack of funding for research and reliance on donor’s support for local institutions.

Human capacity. There is a dearth of qualified researchers, the few available being so under-funded that they often resort to working for NGOs and foreign donors or development agencies. Government officials are often not capable of interpreting, analyzing and using research evidence in policy. Teaching staff are under resourced and over worked. There is no commitment to support the production of a skilled workforce, and the field of knowledge production will most likely continue to lack capacity for the foreseeable future.

Funding patterns. Members of academic staff of the universities can find themselves hamstrung by a lack of local research funding; most researchers who have produced credible peer-reviewed academic work have only been able to do so through foreign grants.

NGOization of Academia. Academics are discouraged by low wages, and a lack of promotion due to a failure to produce and publish research, the basis for academic promotions, a vicious cycle indeed. As an alternative, many move into working as consultants for NGOs, donor agencies and UN organizations, making academic independence nearly impossible, as they only respond to research questions and terms of reference produced by consulting agencies. This is not unique to South Sudan. Mahmood Mamdani of the Makerere University Institute for Social Studies described this situation in Africa as “NGOization of academia.

Access to information. The weakness among qualified researchers is linked to a lack of access to information, the internet and computers. Access to the internet, where it exists, is extremely poor, rendering researchers unable to read journals, web-based research products or communicate with peers and counterparts abroad.

Communication. This level is about the channels through which to feed generated knowledge into policy decisions and through which decision makers channel their questions and request for such knowledge. On the whole, such channels are non-existent or unclear. The result is that major public policy decisions are made in a vacuum, based on the sentiments of the public officials concerned and not on any kind of credible evidence-based analysis.

Coordination/coorperation. There are limitations in the area of coordination between the research agencies themselves (which would limit areas of duplication) and between knowledge producers and policymakers. Many think tank and university researchers complain that public institutions do not allow access to records and object to requests for interviews, often through fear of criticism. This is a major hindrance to knowledge acquisition and to the ability of institutions to learn about themselves, all of which obstructs the country’s development agenda.

The production of quality research in South Sudan is often faced with political and security issues. For example, despite the existence of the National Research Council, it is not functioning and hardly anyone actually knows where it is physically located, with no designated name or contact information for a prospective researcher to contact.

The national or state government does not maintain a single place where researchers could go to obtain research permits, and without a government research permit, the researcher runs into troubles with the security personnel. They demand evidence of authorization for the research project, for interviews, taking photos and travelling to remote places of the country. Obtaining such a permit requires personal connections with senior members of the government, personalizing a process that is supposed to be streamlined and institutionalized.

Qualified field researchers, interviewers, enumerators, data entry people and translators, capable of producing high-quality outputs, are hard to come by, particularly in remote areas. There are also many logistical hurdles to research, travel throughout the country is very difficult, costly and downright dangerous.

**Refence**

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