**RRT training package**

**A5.2 Occupational safety and health: Scenario-based exercises**

**Facilitator guide**

**Learning objectives:**

* Identify key health and safety hazards associated with the concerned activity.
* Identify key manners in which exposure to human beings can occur in the concerned situation.
* Identify key health and safety impacts due to exposure to the hazard
* Correctly enumerate key actions / controls required to prevent or manage the hazards and risks.

**Duration:** 45’-60’ total (Instructions 5’, group work 15’, debrief 5’ per group, wrap-up: 5’).

**Method**: Group work

**Debriefing notes**

**Scenario 1: Handling and managing suspect case of communicable disease at the airport**

A 24 years old man has arrived by a flight from country X with fever, coughing, body ache etc. The case is suspected to be suffering from some acute disease. There is an outbreak of Influenza currently occurring in the country X.

**OSH controls at points of entry, exit and crossings at airports and sea ports:**

Workers at points of entry and exit (PoE) at airports, seaports and land crossings provide services including control of documentation; scanning body temperature and health assessments to international travelers, and handling of baggage, cargo, containers, conveyances, goods and postal parcels. Risks for workers include contact with the body fluids of international travelers, and contaminated surfaces and clothes.

Following OSH controls must be in place for protection:

* Workers carrying out screening of passengers should be supplied with PPE commensurate with the risk assessment for their tasks. PPE should include at a minimum disposable gloves. Workers should avoid touching travelers and maintain a safe distance of 1 meter or 3.2 feet wherever possible.
* Workers should also perform hand hygiene with soap and water or alcohol based hand-rub.
* Medical or public health staff conducting health assessments of ill or suspect travelers should be supplied with appropriate PPE, including disposable gloves, long-sleeved impermeable gown, face mask, eye protection (i.e. face shield or goggles) and close-toed shoes with shoe coverings or gum boots. Face mask, eye protection and a water-resistant apron in case the gown is not impermeable are important, particularly if there is any risk of blood or body fluid splashes (e.g., the patient is vomiting, bleeding or has diarrhoea).
* Workers conducting exit screening should be trained in the correct use of PPE and infection control in handling suspected cases, and must perform hand hygiene with soap and running water or an alcohol-based handrub solution, and a single-use towel.
* Personnel at PoE, including cargo handlers, should not handle packages that are visibly soiled with blood or body fluids.

**Scenario 2: Handling and transportation of suspected case of communicable disease, etc.**

A 12 years old boy has arrived in city A by a bus from another city B, 250 km away where there are news of a disease outbreak ongoing in that city. The boy appears sick with high fever, redness in eyes, body ache etc. The boy needs to be transferred from bus stand to the local municipal hospital by local transport. Mr X and Mr Y, two health workers from the hospital are ordered to bring the boy to the hospital in the ambulance.

**OSH controls during transportation by ambulances and vehicles for patients or dead bodies:**

Persons transporting patients with highly infectious diseases are at risk of exposure through contact with the patient’s body fluids. Those transporting the bodies of patients who died from highly infectious diseases are also at risk. Cleaning and disinfecting the vehicle also poses a risk of infection.

The following control measures should be applied:

* Person who has direct physical contact with suspected or confirmed case (e.g. helping the patient to get into the ambulance; providing care to patients during the transport) should use appropriate Personal Protective Equipment (PPE).
* If a patient is not vomiting or bleeding, and does not have diarrhoea, PPE should include at least gloves, mask, and gown.
* If a patient is vomiting, bleeding or has diarrhoea, or if handling dead bodies, PPE should always include either coverall or full protection with double gloves, respirator such as N 95, impermeable gown (or a waterproof apron over a non-impermeable gown), eye protection (goggles or face shield) and boots/closed shoes with overshoes.
* If the patient is coughing, he/she should be asked to wear a mask.
* Before loading a dead body into a vehicle, the body should be put in a double plastic body bag. The outer surface of each body bag wiped with a suitable disinfectant, the bag then sealed and labelled as highly-infectious material.
* PPE should always be changed and safely disposed of after assisting a patient who has been vomiting or bleeding or has had diarrhoea, or after loading dead bodies.
* PPEs should be put on and carefully removed according to WHO instructions and pictograms. When removing PPE, care should be taken to avoid any contact between the soiled items (e.g. gloves, gowns) and any area of the face (i.e. eyes, nose or mouth) or non-intact skin.
* PPE should be disposed in waste containers or plastic bags for highly infectious material.
* Responder should perform hand hygiene with an alcohol-based handrub solution or with soap and water after exposure to a patient’s blood and body fluids, after touching contaminated surfaces/items/equipment, and after removal of PPE.
* PPE is not required for individuals driving or riding the vehicle, provided that drivers or riders will not touch any patient or any person accompanying the patient, and will not help to load or handle a dead body.
* Ambulances and other vehicles used for patient transport should be regularly (at least once a day) cleaned and decontaminated with standard detergents/disinfectants. If the surfaces have been soiled with blood or bodily fluids, they should be cleaned and decontaminated immediately.
* Ambulances and other vehicles used for patient transport should always be equipped with gloves, masks and full PPE sets; alcohol-based handrub solutions; waste bags and body bags; water tank; and wipes, detergent and disinfectant. This includes training of the ambulance operators as well as fit tests required for use of respirators.

**Scenario 3: During case investigations among community in the field.**

An outbreak of vomiting, loose motions and dehydration among children has occurred in a village 25 km from the district hospital. An epidemiologist and a social scientist are ordered to carry out case investigations among the community in the village.

**OSH controls during working in community (social mobilization, contact tracing, case finding, etc.):**

The work in community for case detection, contact tracing, social mobilization etc. involves high risk of contact with undetected cases and poses high occupational health risk of infections to the health workers.

Therefore, such work must always be carried out with following safeguards in place:

* Shaking hands and any other social contacts during social mobilization activities and interviews should be avoided.
* Personal protective equipment such as impermeable gown, face mask, eye protection and examination gloves, boots and hand hygiene products (preferably an alcohol-based hand-rub solution) should be available for use.
* Distance of more than one meter (about 3 feet) to be maintained between responder and the interviewee even if the person doesn’t seem to be sick.
* Any physical contact with the interviewee and with the environment to be avoided.
* When these precautions are adopted and when interviewing asymptomatic individuals (e.g., neither fever, nor diarrhea, bleeding or vomiting), PPE is not required.
* Hand hygiene to be carried out after any contact with a suspected case and potentially contaminated environment, and when leaving the place where interviews were conducted for contact tracing and case finding in the community.

**Scenario 4: Sample collection, transportation and testing of laboratory samples of blood, body fluids etc. from suspected cases.**

The laboratory technician in the hospital is instructed to collect blood samples from cases of a suspected infectious disease outbreak in a village.

**OSH controls while working in laboratory:**

* The head of the laboratory is responsible for developing policy and program and support its implementation. In addition, the laboratory safety is also the responsibility of all supervisors and laboratory employees, and individual workers who are responsible for their own safety and that of their colleagues.
* Standard precaution should always be followed; barrier protection (gowns, gloves) should be used whenever samples are obtained from patients.
* Good laboratory practices should be followed. Eating, drinking and smoking is prohibited in the laboratory working areas.
* Personal protective equipment (gown, gloves, eye protection) should be worn in the laboratory when handling and processing specimens and testing.
* Minimizes the formation of aerosols and droplets.
* Biological safety cabinets or other physical containment devices should be used for all manipulations that may cause splashes, droplets, or aerosols of infectious materials.
* The use of hypodermic needles and syringes should be limited. Mouth pipetting must be strictly forbidden.
* Adequate and conveniently located biohazard containers should be available for disposal of contaminated materials.
* Work surfaces must be decontaminated after any spill of potentially dangerous material and at the end of the working day.
* Personnel must wash their hands often – especially after handling infectious materials and animals, before leaving the laboratory working areas, and before eating.
* Personal protective equipment must be removed before leaving the laboratory.

**Scenario 5: During accidental exposure to blood or body fluids in healthcare facilities.**

The laboratory technician collecting the blood sample from a suspected case of viral haemorrhagic fever in the isolation ward accidently slipped while transferring the sample from the syringe to the collection test-tube in the laboratory and received splash of blood from the sample on his face.

**Accidental occupational exposure to infectious materials:**

In case of incidents involving cases of highly infectious diseases, health-care and other workers should take follow actions:

* Immediately and safely stop any current tasks, and leave the patient care and workplace areas.
* Remove PPE carefully, following appropriate procedures. Exposure during PPE removal can be dangerous and result in occupational transmission of VHFs such as EVD.
* Immediately after removal of PPE, wash the affected skin surfaces or the site of the injury with soap and running water or saline for at least 15 minutes. Accordingly, irrigate mucous membranes (e.g. conjunctiva) with copious amounts of water or an eyewash solution. Do not use chlorine solutions or other disinfectants.
* Immediately report the incident to the supervisor. This should be performed as soon as the health-care worker leaves the patient care unit.
* Exposed persons should be medically evaluated, taking into account other potential blood-borne exposures (e.g., HIV, hepatitis B and C) and receive Post Exposure Prophylaxis and follow-up care,
* Workers suspected of being infected should be isolated and receive care until a negative diagnosis is confirmed.
* It is essential to conduct contact tracing and follow-up of family, friends, co-workers and other patients who may have been exposed to VHF such as Ebola virus through close contact with the infected health-care worker.

Management of possible exposure to other conditions e.g. Hepatitis B and C:

* Previous HBV vaccination should be assessed and vaccination offered if required according to age-appropriate national immunization schedules.
* Hepatitis B immunoglobulin protects by passive immunization if given shortly after exposure and should be considered if available for unvaccinated or partly vaccinated individuals in addition to vaccination.
* Screening for HCV should be offered in accordance with WHO guidelines. Individuals should be counselled on the risk of acquiring HCV and be referred to specialist care if sero-conversion occurs.

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