BIOSAFETY & BIOSECURITY

PROTECTIVE PROCEDURES

FOR MEKONG BASIN CROSS-BORDER
1. Standard biosafety procedures
2. Effective hand washing (10 steps)
3. Steps of putting on PPE
4. Sequence for removing PPE
5. Sequence to remove PPE for dangerous pathogens
6. Cross border health quarantine requirement (Routine)
7. Cross border health quarantine requirement for PHEIC
   (Public Health Emergency of International Concern)
8. Infection control practices for patients with severe diarrheal diseases
9. Infection control practices for patients with fever, convulsion and unconsciousness
10. Infection control practices for patients with severe respiratory diseases
11. Biosafety practices when dealing with found-dead animals
12. Good hygiene at home
**STANDARD BIOSAFETY PROCEDURES**

### Hand Washing
(10 steps of effective hand washing)

1. Wet Hands and Apply Soap
2. Palm to Palm
3. Between Fingers
4. Back of Hands
5. Wrist
6. Fingernails
7. Back of Fingers
8. Base of Thumbs
9. Wash with Thumbs
10. Dry with Water

### Safe Handling and Disposal of Sharps

USED DISPOSABLE NEEDLES or SHARPS shall be discarded immediately into sharp container WITHOUT RECAPPING.

Follow ONE-HANDED RECAPPING PROCESS when NEEDLES are NOT in CONTACT with animal BLOOD or TISSUE.

### Proper Use of Disinfection and Sterilization Techniques

Almost PATHOGENS WITHOUT SPORES can be inactivated by BOILING for 30 minutes.

COMPLETE STERILIZATION of SPORES [soil-contaminated materials] needs AUTOCLAVING.

### Protectivte Barriers

- Mask and Protective Eyewear
- Gloves
- Uniform or Lab Coat
- Shoes

### Effective Insect and Rodent Control Program

Disinfect WORK SURFACE after working with 0.1% - 0.2% HYPOCHLORITE solution or 2% BLEACH.

Disinfect FLOOD CONTAMINATED SURFACE with 0.5% HYPOCHLORITE\(^1\) (10% BLEACH\(^1\)) thoroughly and clean with ALCOHOL.

1. Do not mix sodium hypochlorite with hydrogen peroxide or acids.
2. Household bleach is, in general, a solution containing 3-5% sodium hypochlorite and 0.01 - 0.05% sodium hydroxide; the sodium hydroxide is used to slow the decomposition of sodium hypochlorite.
EFFECTIVE HAND WASHING
(10 STEPS)

1. Wet Hands
2. Apply Soap
3. Palm to Palm
4. Between Fingers
5. Back of Hands
6. Base of Thumbs
7. Back of Fingers
8. Fingernails
9. Wrist
10. Wash with Water

Dry with Towel & Dispose it in Closed Garbage
**STEP 1**
WEARING THE GOWN, CAP AND SHOES
Cover body fully from neck to knees and wrists, and wrap around the back. Wear cap and shoes.

**STEP 2**
WEARING N95 MASK
- Tie securely or put elastic bands at middle of head and at the neck.
- Fit flexible band to nose bridge.
- Fit comfortable to face and below chin.
- Fit check.

**STEP 3**
WEARING GOGGLES OR FACE SHIELD
- To prevent blood-borne and some respiratory pathogens.
- Place over face and adjust to fit.

**STEP 4**
WEARING GLOVES
- Select size-fitting gloves.
- Cover wrist and gown of each hand.
**SEQUENCE FOR REMOVING PPE**

**Step 1. GLOVES**
- Catch outside of glove with opposite gloved hand then peel off so that outside becomes inside.
- While holding removed glove in gloved hand, slide fingers of ungloved hand under remaining glove at wrist.
- Peel off over first glove.
- Discard glove in waste container.

**Step 2. GOOGLEs OR FACE SHIELD**
- Remove google or face shield from the back by lifting ear pieces.
- Discard in waste container.
- To reuse, use antiseptics such as spraying with 70% alcohol.

**Step 3. GOWN**
- Unfasten gown ties, taking care that sleeve do not contact your body.
- Pull gown away from neck and shoulders, touching inside the gown only.
- Turn gown inside out.
- Fold and roll in to a bundle before discard in waste container.
- To reuse, put in plastic bag and then autoclave.

**Step 4. N95 MASK AND CAP**
- DO NOT TOUCH front of mask, it is contaminated!
- Untie or grasp both bottom and top elastic bands of mask, and remove without touching the front.
- Remove cap.
- Discard mask and cap in waste container.

**Step 5. WASH HANDS IMMEDIATELY AFTER REMOVING ALL PPE**
SEQUENCE TO REMOVE PPE FOR DANGEROUS PATHOGENS

Step 1.
REMOVAL GOWN AND GLOVE TOGETHER

1. Catch outside the gown and pull away from the body without untying.
2. Peel off your gloves while removing the gown from arms at the same time. Your bare hands must touch only the inside of the gloves and gown.
3. Fold and roll in to bundle beforediscard in waste container.

Step 2.
GOOGLES OR FACE SHIELD

Remove google or face shield from the back by lifting ear pieces.
- Discard in waste container.
- To reuse, use antiseptics such as spraying with 70% alcohol.

Step 3.
REMOVE MASK OR RESPIRATOR

DO NOT TOUCH front of mask. It is contaminated!
- Untie or grasp both bottom and top elastic bands of mask, and remove without touching the front.
- Remove cap.
- Discard mask or respirator in waste container.

Step 4.
REMOVE CAP

And discard cap in waste container.

Step 5.
WASH HANDS IMMEDIATELY AFTER REMOVING ALL PPE
CROSS BORDER HEALTH QUARANTINE REQUIREMENT (ROUTINE)

PoE Core Capacity Requirements At All Times (Routine)

A. Assessment and medical care staff and equipments

B. Equipments and personnel for transport ill travellers

C. Trained personnel for inspection of conveyances

D. Ensure save environment water, food, waste, wash rooms other potential risk areas - inspection program

E. Trained staff and programme for vector control
CROSS BORDER HEALTH QUARANTINE REQUIREMENT FOR PHEIC
(PUBLIC HEALTH EMERGENCY OF INTERNATIONAL CONCERN)

A. PUBLIC HEALTH EMERGENCY CONTINGENCY PLAN COORDINATOR, CONTACT POINTS FOR RELEVANT POE, PH & OTHER AGENCIES

B. PROVIDE ASSESSMENT AND CARE FOR AFFECTED TRAVELLERS, ANIMALS; ARRANGEMENT WITH MEDICAL, VETERINARY FACILITIES FOR ISOLATION, TREATMENT AND OTHER SERVICES

C. PROVIDE SPACE SEPARATE FROM OTHER TRAVELLERS TO INTERVIEW SUSPECTED OR AFFECTED PERSONS

D. PROVIDE FOR ASSESSMENT QUARANTINE OF SUSPECTED OR AFFECTED TRAVELLERS

E. APPLY RECOMMENDED MEASURES DISINFECT, DISINFECT, DECONTAMINATE BAGGAGE, CARGO, CONTAINERS, GOOD, CONVEYANCES, POSTAL PARCELS ETC.

F. APPLY ENTRY/EXIT CONTROL FOR DEPARTING & ARRIVING PASSENGERS

G. PROVIDE ACCESS TO REQUIRED EQUIPMENTS, PERSONNEL, WITH PROTECTING GEAR FOR TRANSFER OF TRAVELLERS WITH INFECTION/CONTAMINATION.

PoE Core Capacity Requirements for Responding to Potential PHEIC (EMERGENCY)
SEVERE RESPIRATORY SYMPTOMS MAY INDICATE PNEUMONIA

FEVER
RAPID OR DIFFICULTY IN BREATHING
COUGH

SOME AGENTS OF PNEUMONIA cause OUTBREAKS:
INFLUENZA including AVIAN, Emerging Viral Diseases such as SARS, MERS etc.

DANGEROUS:
Elderly, Chronic Heart and Lung Diseases, Difficulty in Breathing, Inability to Drink, Exhauion and Cyanosis

PATHOGENS are Acquired through CONTACT with SECRETIONS or INHALING AEROSOLS Generated During Cough.

PROTECTION

Use PROTECTIVE BARRIERS (Gowns, N95 Masks or Facial Shield, Caps, Goggles), Wash Hands after contacting Patients or Soiled Bedding.

Pneumonia Patients with Suspected Contagious Pathogens Should be Referred to Appropriate Treatment Facility.

Patients should wear SURGICAL MASKS to decrease aerosols and spread of secretions.

Cleaning of Contaminated Surface must Be Ensured.

Air in Patient’s Rooms Should BeVentilated Into Open Air Spaces Outside the Building. Most Respiratory Pathogens are Sensitive to Sunlight.

Waste from Patient Must Be Disinfected or Properly Destroyed.
INFECTION CONTROL PRACTICES FOR PATIENTS WITH FEVER, CONVulsion AND unconciousness

DISEASES that cause fever, convolution and unconsciousness

ENCEPHALITIS, MOSTLY CAUSED BY VIRUSES

MENINGITIS CAUSED BY BACTERIA.

TRANSMISSION

Many viral encephalitis transmitted to human by mosquito bite. (Japanese B encephalitis, West Nile encephalitis.)

Meningococci can be transmitted from human to human by contact to secretions.

Streptococcus suis is transmitted from infected pigs or carcasses.

SYMPTOMS

FIRST - Fever
LATER - Convulsion and Unconsciousness

PROTECTION

Wearing gloves, coat and mask when handling patients. Avoid contacting body fluid.

First aid for a convulsive or unconscious patient

Clearing of airway.

Remove everything from the mouth and throat including denture.

Prevent aspiration (Turning the patient to his side, if possible)

Do not give water or food to unconscious patient.

Refer the patient to a Hospital as soon as possible

Disinfect patient's waste

Keep vigorous surveillance. Other people with fever should seek medical attention as soon as possible.

Prophylactic drugs for contacts of patients with meningococcal diseases, including health personnel.
INFECTION CONTROL PRACTICES FOR PATIENTS WITH SEVERE RESPIRATORY DISEASES

SEVERE RESPIRATORY SYMPTOMS MAY INDICATE PNEUMONIA

- FEVER
- RAPID OR DIFFICULTY IN BREATHING
- COUGH

SOME AGENTS OF PNEUMONIA cause OUTBREAKS:
- INFLUENZA including AVIAN, Emerging Viral Diseases such as SARS, MERS etc.

DANGEROUS:
- Elderly, Chronic Heart and Lung Diseases, Difficulty in Breathing, Inability to Drink, Exhaustion and Cyanosis

PATHOGENS are Acquired through CONTACT with SECRETIONS or INHALING AEROSOLS Generated During Cough.

PROTECTION

- Use PROTECTIVE BARRIERS (Gowns, N95 Masks or Facial Shield, Caps, Goggles), Wash Hands after contacting Patients or Soiled Bedding.

- Pneumonia Patients with Suspected Contiguous Pathogens Should be Referred to Appropriate Treatment Facility.

- Patients should wear SURGICAL MASKS to decrease aerosols and spread of secretions.

- Cleaning of Contaminated Surface must Be Ensured.

- Air in Patient’s Rooms Should Be Ventilated into Open Air Spaces Outside the Building. Most Respiratory Pathogens are Sensitive to Sunlight.

- Waste from Patient Must Be Disinfected or Properly Destroyed.
BIOSAFETY PRACTICES
WHEN DEALING WITH
FOUND-DEAD ANIMALS

ANIMAL DISEASES, that
CONTAGIOUS TO HUMAN include
AVIAN INFLUENZA, RABIES,
NIHAVIRUS INFECTION,
STREPTOCOCCUS SUIS,
ANTHRAX, TULAREMIA,
EBOLA, PLAGUE,
etc.

FOR SMALL ANIMALS,
SUCH AS DOGS, CATS,
BIRDS, AND RATS

Put the carcass in double
plastic bag and seal well and
bury in a deep hole
(about 1 meter).
The carcass can be
put in a double bag,
in a well sealed package,
labelled and kept in a
refrigerator if subsequent
examination is desired.

Put lime or paving stones
over the hole to prevent
scavengers.

Put a marker so that the
carcass can be found if
later examination
is needed.

FOR A BIG ANIMAL

Call a veterinarian
or an animal health officer.

TRANSMISSION
TO HUMAN

INGESTING
the meat

CONTACT
with body fluids
(i.e., blood, urine,
teces, etc.)

BITTEN
by external parasites
(flea, etc.)

PREVENTION

DO NOT EAT
FOUND-DEAD
ANIMALS
Do not try to cook,
one can be
infected during meal preparation

AVOID
contacting body fluids and
external parasites.

SPRAY
the carcass with
flea & tick spray
prior to handling it
(if pesticide poisoning
is not suspected).
The spray may
interfere with lab
testing for pesticides.

INCINERATION
is safer if available.

For an OUTBREAK of
sick and dead animals,

REPORT to a veterinarian or a health officer immediately.
DO NOT TRY TO HANDLE unless you are already strained.
GOOD HYGIENE AT HOME

COOK AND STORE FOOD PROPERLY
Use REFRIGERATOR to Prevent from SPOILING

CLEAN CLOTHES SEPARATELY
(Do not mix blood, faeces, or body fluids stained clothing with household laundry)

DISPOSE WASTE in CLOSED GARBAGE

KEEP BEDDING and CLOTHING CLEAN

WASH YOUR HANDS

BEFORE
(cooking, eating, feeding another person, dressing wound)

AFTER
(using toilet, changing diapers or soiled bedding, take care of sick people)

Keep your WOUNDS COVERED with BANDAGE or CLOTH

Use GLOVES to handle soiled items

Use INSECT REPELLENTS to avoid mosquitoes biting

Cover your mouth with MASK when coughing or sneezing

DO NOT SHARE sharp or skin-piercing instruments
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