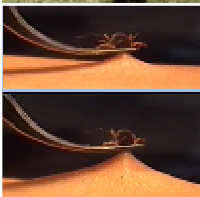


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Prevention of Crimean-Congo Haemorrhagic (CCHF) Fever (Human and Animals) in Pakistan



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A). PREVENTION OF CCHF TRANSMISSION AT HOME AND COMMUNITY LEVEL

Prevention against Tick Bites

Prevention of ticks includes both chemical and non-chemical measures and to decrease risk of tick bite and associated infection, following instructions must be adopted;

Treatment of animals at entry points

- Animals bring from CCHF infested areas should be treated at “Entry Pints” through direct application of insecticides (acaricides) to bodies of domestic animals through;
 - Spraying of *Liquid formulation* should be applied with hand-compression sprayer (Treatment of herds).
 - Dusting of *powder formulation* directly by means of puff-duster or plunger-type duster (Preferable treatment at home level).
- Heavy application of dusting should be avoided and should not be allowed to get into the eyes, nostrils and mouths of animals.
- It is particularly important to treat the back, neck, belly, and back of the head.
- Insecticides treatment should be 12-15 days before slaughtering of animals.

Treatment of animal keeping houses (Animal sheds)

- Spray residual insecticides on floor (also lower areas of walls) of animal houses and associated porches, verandas, and also other places where domestic animals rest or sleep.
- For better control of hiding ticks, inject liquid formulation of insecticides in cracks and crevices by using syringe (*Spot Treatment*).
- Powder formulation of insecticides (preferably Pyrethroids) can be dusted on crevices and crevices in wall, floor, in furniture (*Spot Treatment*).
- In case of heavy infestation, animals shed must be sprayed at interval of 4-5 weeks.
- 2 applications of acaricides and weedicides per season directly on/in their natural habitats like grasses and other vegetation close to animal shed will be adequate to control ticks in around houses.

Personal Protection

- Avoidance of visiting areas where tick vectors are abundant
- Persons who work with livestock or other animals in the endemic areas can take practical measures that include;
 - Use of *Repellents* such as PICARIDIN/ICARIDINE, DEET etc particularly to lower exposed body parts (foot, ankle etc.,) and arm and face generally.
 - Wear *Protective clothing* such as long-sleeved shirts, long trousers, boots or a head covering, and hand gloves
 - Treatment of cloths with *Permethrin* particularly during peak breeding season
- In case of visit, wear light color cloths so that any tick can easily be detected and removed.

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Removal of vegetation

- Removal/destruction of their natural habitats through cutting, mowing grasses and weeds around the house or animal shed.
- Remove all items that attract rodents which may carry ticks, such as spilled birdseed
- Destroy rodents borrows if any found around home or animal shed

Care at Home during Eid-ul-Azha

- During slaughtering, wear long gloves and shows
- Leave slaughtered animal for at least 30 minutes
- Afterwards it should be cut in to pieces

Removal of ticks from skin (Physical)

- Never attempt to place any chemical such as *methylated* spirits onto the tick, nor should it be touched with bare hands or disturbed, as the tick may inject saliva into the skin, which could make the situation worse.
- Do not burn the tick with a match.
- Do not use *bare hands* to remove the tick because tick secretions may carry disease.
- Tick should be sprayed with an **aerosol** insect repellent preferably containing pyrethrin or a pyrethroid or scabies cream containing permethrin can be used.
- The best way to remove a tick is to grasp it firmly with tweezers as close to the skin as possible and gently, but firmly, pull it straight out. Do not twist or jerk the tick.
- If tweezers are not available, grasp the tick with a piece of tissue or cloth or whatever can be used as a barrier between fingers and tick.
- The bite area and hands should be wash thoroughly with soap and water and apply an antiseptic to the bite site.



After visiting tick infested area, if there is unexplained illness with fever, contact a physician immediately and inform him/her about travel history to areas where tick-borne diseases are common.

List of insecticides for treatment of animals and resting palaces

Application methods	Insecticides				Remarks/ Interval b/w application and slaughtering
	Pyrethroids	Carbamates	Organophosphates(OP)	CHC	
Spraying	Deltamethrin 5%, Alphcypermethrin 5% Cyfluthrin Cypermethrin	Bendiocarbs 0.3-0.4% Propoxur 1% Carbaryl 5%,	Malathion 2% Fenitrothion 5% chlorpyrifos 0.1%, Pirimiphos-methyl 1% Diazinon 0.5%	DDT 5% Lindane 0.5%	CHC: 30 days before slaughtering OP: 10-14 days before Pryth: 1-2 week NOTE: Use on lactating Dairy goats sheep should be avoided.
Dusting	Deltamethrin 5%, Alphcypermethrin 5% Cypermethrin	Bendiocarbs 1%, Propoxur, Carbaryl 5%,	Malathion 3-5% Fenitrothion 5% Dichlorvos 0.1%, Trichlorphos 1%	DDT5% Lindane 0.5%	Don't treat animals under 1-3 mo. old. Don't treat more than twice in spring and fall.
Washing/Bathing (Least preferred)		Carbaryl 1%,	Malathion 5% Dichlorvos 0.1%, Pirimiphos-methyl 1%		However, all these instructions vary with different chemicals therefore follow instructions on label.
Note: Follow the dose criteria of manufacturers					

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B). PREVENTION OF CCHF TRANSMISSION AT HEALTHCARE FACILITY LEVEL

Apply standard precautions for all patients all times. Avoid unprotected exposure to blood, body fluids, mucous membranes, and non-intact skin. When patients with CCHF are admitted to hospital, to avoid the risk of nosocomial spread of infection health care providers must follow these instructions;

- Patients with suspected or confirmed CCHF should be kept in isolated ward and cared for using protective infection control measures as per the standard precautions.
- Only designated medical/paramedical staff and attendants should attend the patients after wearing the required PPE according to expected exposure risk as follows;
 - If you expect exposure to blood, body fluid, mucous membranes, or non-intact skin use disposable gloves, and gowns.
 - If you expect splashes of patient's blood or body fluids to the face and body, wear gloves, gowns, and use face protection (face shield, or mask and goggles)
- PPE should be removed safely and disposed immediately after the medical procedure.
- Specimens of blood or tissues taken for diagnostic purposes should be collected and handled using standard precautions.
- Maximum care should be adopted to avoid the spill, pricks, injury and accidents during patient handling. All instruments should be de-contaminated and reprocessed before re-use.
- Contaminated needles and sharps should be disposed of immediately after use in puncture proof, sharp boxes. All waste contaminated with blood or body fluids should be considered bio-hazardous wastes and should be handled, disposed, safely.
- All linen and hospital clothings used by patients must be collected, handled, and transported safely. HCWs should wear proper PPEs to prevent exposure to contaminated linen and sheets. Linen should be transported in leak-proof bags to avoid contamination of the environment. Linen can be washed in the hospital laundry as per the hospital policy.
- All surfaces should be de-contaminated with liquid bleach, Use concentration of (1 bleach: 99 water) of 5% chlorine bleach for environmental decontamination of the surfaces and floors. Use concentration of (1 bleach: 4 water) for decontamination of blood and body fluid spills. Prepare bleach solution fresh daily and keep it in tight dark container.
- In case of death of CCHF patients, family should be advised for safe burial practices. Precautions should be taken to prevent exposure to blood, body fluids, and non intact skin.
- All healthcare workers who exposed to potential CCHF infective source should report exposure to the hospital administration. Blood sample should be sent to the NIH for testing. For high risk exposures (needle stick, sharp injuries, contact of patient's blood with HCW's mucous membrane or non-intact skin, or gross splash of blood or body fluids to HCW's body) Ribavirin should be started immediately. Cases of low risk exposure (e.g. contact with patient environment) should be followed up by body temperature and CBC for 14 days. If any case starts to show low platelet and/or WBCs counts, Ribavirin and treatment measures should be started immediately.