



DIRECTORATE OF HEALTH SERVICES

Vanchiyoor.P.O., Thiruvananthapuram. Pin – 695035

Ph: 0471-2302490 Fax:0471-2303025/2303080

Email: dhskerala@gmail.com **Website:** www.dhs.kerala.gov.in

Immediate post-flood recovery activity - Brief guidance note

PH division, Directorate of Health Services, Thiruvananthapuram, Kerala,

(Version updated 24.8.2018)

****As the current post-disaster situation is continuously evolving, this guideline is liable to frequent modification.**

Please check the website for the latest dated version for use and dissemination.

Aim- Providing health advice regarding

- The cleaning -up process
- Short- and longer-term risks to health from flood contamination.
- Practical advice to people re-entering their homes, clean-up workers and deployed personnel.
- To prevent health-related 'secondary disasters'

Important basic points. -Tips for avoiding 'secondary disaster' like events

- People should not return home before it is safe (structure, electrical, cooking gas, etc). *Communicate the same to LSG authorities/ rescue and revenue officials for coordination*
- Remember threats to food and water safety** from contamination of supplies and Surfaces by flood waters –
- Maintain hygienic and sanitary precautions until the clean-up is complete.
- Ensure electrical safety with the help of electricians before switching on electricity main switches/ household appliances
- Watch out for hidden reptiles- snakes, etc inside homes/ shelves, storage spaces etc
- All to please comply with technical guidance of Health Department officials.

Disseminate preventive health messages:-

- *Good hand hygiene practices- soap and water handwash, hand sanitisers etc*
- *20 minute boiling of drinking-water, even if bottled or super-chlorinated*
- *Super-chlorination of water sources- wells, tanks See below ***
- *Safe food preparation techniques- do not mix left overs with fresh food*
- *Early treatment-seeking behaviour in case of fever- especially for very young, very old, and pregnant/co-morbidity-patients*
- *Personal protection mosquito- repellent creams, mosquito coils, vapourisers, Ayush Department advocated 'dhoopams' etc could provide bite prevention in immediate circumstances*
- *Enhanced vector control interventions, adapted to the local context.*

Generator use caution

- Be aware of risk of carbon monoxide poisoning cases where generators are continuously used. This can be avoided by ensuring proper ventilation, and not placing the generators in closed spaces

Basic Safety points related to cleaning -up activities.--

- Householders should try to wear appropriate gloves and foot protection when cleaning specially dirtied areas
- Clean-up crews should in general wear essential protective equipment, like waterproof Gum- boots, hard hats, goggles and heavy duty gloves.
- Bleach solution/ DCS- (Disinfectant Cleaning Solution) may be used for all general cleaning and decontamination processes, -(floors, walls, ceilings, wood and plastic furniture, household articles, etc, ***but not any electrical device***) This is to be done preferably after preliminary removal of mud, silt, debris etc--- Preparation method --see below**
- Please note that kerosene, diesel, etc do not have any germ killing properties in general.
- Clean-up workers should be advised Tetanus Toxoid vaccine if their vaccination status is not up to date.
- Wounds, burns, cuts and injuries should be treated immediately by washing, and application of common antiseptic ointments, even if minor. Any worsening (redness, pain, swelling, pus) to be shown to a doctor /nurse/ health worker

✓ ****Preparation of DCS bleach solution-**

- --150 gms Bleaching powder, and 2-3 tsp common soap powder or washing soda (alakku kaaram) for every 10 litres. Use plastic mugs/spoons etc for handling this material
- Place the req quantities in a plastic bucket, add small quantity of water, mix well into a smooth paste using gloves or a thick rod , (but do not use bare hands), add the full quantity of water, mix well, wait 5-10 minutes for sedimentation, the DCS is now ready for use

✓ ****Super-chlorination of wells/ tanks /underground sumps**

- Bleaching powder 5 grams (one teaspoon) for every 1000 liters of the estimated volume of the well/tank/sump to be added after making a paste of the required total quantity, and diluting, and sedimenting as above
- This process to be repeated two times per week, eg Wednesdays and Saturdays for 2 months
- The **volume of a well in litres** can be calculated by the formula below--

$\frac{(\text{Diameter of the well in metres})^2 \times 3.14 \times \text{height of water in metres} \times 1000}{4}$

✓ ****Water safety for Drinking water and Water for washing utensils, vegetables etc --
Methods for Water Chlorination**

- Boiling remains the best method to ensure drinking water safety, even if the source is bottled/pipeline. Boiling should be for 20 minutes ideally
- Chlorination should preferably be preceded by some form of filtration, (conventional, or in the circumstances, adapted /makeshift) .
- Chlorination using Chlorine tablets-- One chlorine tablet (500mg) for Twenty litres water
- OR One 12.5 gram tablet for 500 litres
- OR One 25 gram tablet for 1000 litres
- Using Liquid Chlorine-- 20 ml of liquid chlorine for every 1000 litres water This should be done under strict supervision of trained health staff
- Health Staff shall check the chlorination level randomly in different sources, using the kits provided to them

Cleaning of outdoor premises, compound etc adjacent to buildings, residences etc

- This should initially include collection and safe disposal of solid wastes, biological wastes like carcasses of animals/birds, rotting vegetation etc.
- Fly breeding may be further discouraged and a certain degree of sanitation achieved by scattering a "Sanitising Mixture" prepared by mixing lime powder ("neetu-kakka") and bleaching powder in the ratio 4:1 (eg 1 Kg lime powder +250 gm bleaching powder)
- When disposing of unusable/spoilt food grains, foodstuffs, etc, it is to be done in such a way as to ensure that rats do not get any access to it, otherwise, a very large scale breeding of rats is likely to follow.

Bites by animal/snakes

- Follow all general precautions to avoid bites
- In case of any animal bite, wash well immediately using SOAP AND WATER, take the victim to the nearest hospital IMMEDIATELY for wound assessment and treatment, including tetanus and rabies prophylaxis
- **In case of snake bite--**
 - Calm down the victim; immobilize the bitten limb using a splint/sling.
 - A **semi-tight** tourniquet may be applied above the bite site , if possible
 - Do not allow the victim to walk/run, instead carry the victim to vehicle or ambulance on a stretcher/plank/chair/or directly.
 - Do not meddle with the bitten area in any manner.
 - Transport as fast as possible to nearest hospital where Anti Snake Venom (ASV) is known to be available. (Details are available from the state control room number **1800 123 1454** and on the DHS website. In general, it has been made available at several Taluk HQ Hospitals and upwards, across the state)

Leptospirosis prophylaxis

- Recommended for all persons who had / will continue to have contact with dirty/contaminated water, and especially for those who are engaged in cleaning/relief work
- One single preventive dose protects for a week, so if the exposure to dirty water continues,, the weekly doses have to be continued at weekly intervals.

Adults	Doxycycline 200 mg once weekly as single dose, after food.	(avoid milk / milky drinks along with this medicine) This is to continue as long as the exposure will continue, but limited to 6 weeks
8-12 years	Doxycycline 100 mg, once weekly as single dose, after food	"
2-8 yrs, if felt necessary	Doxycycline @ 4 mg per kg	"
Less than 2 years	Azithromycin @ 10 mg per Kg, on empty stomach	Empirical, may be continued for 5 days
Pregnant/Lactating women	Amoxycillin, 500 mg, 8 hrly x 5 days	

Chicken pox in camp /field situation-- Acyclovir is the drug of choice in this situation.

Treatment		
Adult	800 mg, every 4.5 hours x 5 days, after food	Patients with long term kidney disease may need to receive modified dose of the drug, based on the doctors prescription
Pregnant women	Same as above -- Counselling prescription	The treating doctor should counsel the patient , after assessing the situation on a case-by-case, risk-benefit basis
Children	20 mg per Kg body weight (limited to max 800 mg per dose) , every 4.5 hrs, after food.	
Prophylaxis --		
<ul style="list-style-type: none"> • Patients with diabetes, immunosuppressed conditions and other comorbidities should mandatorily receive prophylaxis in case of contact • Patients with long term kidney disease may need to receive modified dose of the drug, based on the doctors prescription • For other healthy contacts , the history* and treating doctors discretion is to be taken into account to decide on the need for prophylaxis (*Eg, whether the contact had at least 5 minutes of face to face contact with the confirmed case, and whether the contact has had chicken pox earlier in life) 		
Prophylaxis should start 7 days after the contact		
Adult	800 mg, every 6 hours x 7 days, after food	
Pregnant women	Same as above -- Counselling prescription	The treating doctor should counsel the patient , after assessing the situation on a case-by-case risk-benefit basis
Children	20 mg per Kg body weight (limited to max 800 mg per dose) , every 6 hrs, x 7 days , after food.	

Wound care

- All wounds sustained in the post flood situation should be managed with due caution
- Keep the injured part clean and dry as far as possible, and apply general purpose antiseptic ointments/cream
- In case the person has Diabetes, the wound should be managed under a doctor's supervision
- Any wound which shows sudden/unexplained worsening (like redness, swelling, increasing pain. Pus discharge, and especially blebs, bullae or local necrosis, possibility of unusual pathogens is to be considered. Start tab. Ciprofloxacin 500mg 12 hrly, and refer immediately for higher care.
- Tetanus toxoid (according to the advice of the doctor.)

Respiratory infections and 'Viral Fever' in disaster situation.

Special caution to be maintained by all concerned to prevent the spread of Respiratory infections and 'Viral Fever' at this time

Cough hygiene (covering the nose and mouth with a handkerchief or towel when coughing or sneezing) to be practiced by all, including small children, public spitting to be avoided, grouping/clustering of cases of the same to be brought to the notice of Health staff by the public

Special caution against H1N1 and Seasonal influenza to be maintained, especially among pregnant women. Oseltamivir to be used as per ABC guidelines in force

Diarrhoeal disease in post flood situation

- Diarrheal disease outbreaks can be sudden and large
- Prevention is by ensuring hand hygiene, using only boiled drinking water, safe toilet practices, fly control etc
- Patients with diarrhoea in camps/field should mandatorily be seen by a doctor, and appropriate treatment including ORS* initiated.
- Health education related to diarrhoea prevention to be intensively done in the affected area

*ORS preparation

- Wash hands with soap and water
- Mix 1 full pack of ORS powder in 1 litre of safe drinking water in a clean vessel, and keep it covered. This can be used for maximum 24 hours.
- Using ready-made liquid ORS solution (eg. tetrapack/bottled) is generally not advisable
- Please check the pack instructions before reconstituting, as some commercial packs are designed for 1 glass (=200 ml)

Ground level Guiding and Supervising Teams

- Each team to consist of 3-5 members-- eg --ASHA worker*, Arogya Sena member*, Elected ward member, NGO volunteer, Health Staff (**mandatory*)
- Each team responsible for supervising the activity in 100 houses, based on a microplan prepared by the area health staff (Each team can subdivide responsibility among themselves in watertight documented manner)
- One health dept official JHI/JPHN coordinating 10 teams each
- The supply of bleaching powder for chlorination will be done by the team along with the awareness dissemination to the householders
- Home visiting team should carry sufficient Doxycycline tablets for giving to those who have not yet taken Doxy prophylaxis
- Vector control activities also should additionally be supervised from 7th day of activities onwards
- During the house visits, the team will also enquire and note down details about any one with Fever/ Fever + rash / Diarrhoea in the house
- Overall area supervision will be done by the PHC MO.
- The Pulse Polio basic field activity templates available at PHC and Block levels could serve as the best base on which to effectively plan and implement these activities also

Acute mental stress / distress

- Usually temporary, mostly self limited in a reasonable time.
- Post-flood psychological assistance to be provided by psychologists and/or trained personnel.
- People should be encouraged to seek assistance if psychological symptoms aggravate or persist.

- The mental health of responders and health care personnel should be considered, those expressing distress to be helped by counsellors/ psychologists.
- Camp officials/ field staff should inform the MO if they come across any person who was taking medicines for psychiatric issues.
- Anticipate long-term mental health issues (such as depression or post-traumatic stress disorder) monitored in affected communities.
- Prompt restoration of communities and social structure of the affected residents/ communities is important in the context of prevention of long-term mental health outcomes of disasters.
- As all people with emotional/ mental distress may not come forward to seek aid as for physical illnesses, the watchword of all service providers should be '*Look, Listen and Link*'

Disposal of animal carcasses-

The guidelines of the Dept of Animal Husbandry is briefly summarised below for guidance of personnel /members of the public involved. Primary responsibility for the procedures lies with the LSGD.

- Dispose the dead animal immediately in such a way that it does not cause pollution of surface or ground water.
- Recovered carcasses should be disposed of by burial where ever possible, or should be transported to suitable land.

Burial

- Pick a location that will protect both surface water and ground water from contamination.
- The carcass should be buried at least 4-6 feet deep depending on species and should be covered with lime.
- The grave should be at least 200 feet away from any drinking water wells.

To reduce health risk

- Proper hand washing to reduce the risk of diseases that may be transmitted from animals.
- Secure all food sources and remove any animal carcasses to avoid attracting rats and other scavenging animals.

Personal protection when collecting dead animals.

- Avoid direct contact with any dead animal.
- Wear heavy duty gloves and use a shovel when possible while removing carcass.
- Avoid splashing contaminated water and dead animal body fluids into your eyes, mouth, or nose.
- Always wash your hands thoroughly with soap and warm water after removing the carcass and after handling any debris in clean-up activities after a flood.

*Please make sure that you are referring to the most recently updated version of this document ,
on the DHS website, www.dhs.kerala.gov.in
For any clarifications or any related advice, please call Health Department's Flood related helpline 1800 123 1454, or the
NHM 24 -hour helpline DISHA on 0471-2552056, (or 1056 toll free)*