

# **ADVISORY TO DISTRICTS ON ACUTE DIARRHOEAL DISEASE OUTBREAK INVESTIGATION AND RESPONSE**



**STATE SURVEILLANCE UNIT,  
IDSP  
DIRECTORATE OF HEALTH  
SERVICES, ODISHA**



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## 1. Introduction

Waterborne diseases like Diarrhoea, Dysentery, Jaundice, Typhoid are important public health diseases that cause outbreaks which lead to cases & deaths in the community in a short span of time. Out of all causes of Acute Diarrhoeal Diseases, Cholera accounts for 5-10% among other organisms.

Globally 1.8million people die every year & the total DALYS lost is about 4.1%. WHO estimates that 4.9 children die per 1000 per year in the first five years of life. WHO,estimated that about 3.2 episodes of diarrhoea occurred per child (<5yr) per year. During 2010, 11% of diarrhoeal death is contributing to the global cause of death among children under five.(Lancet 2012)

In India, diarrhoeal diseases are a major health problem among children under the age of five years. During 2005, 1.07 million cases & 2040 deaths due to diarrhoeal diseases were reported among under five year old children. National Diarrhoeal Disease Control Programme implemented in 1978 could avert cases & deaths due to diarrhoea in the country. Oral Rehydration Therapy programme implemented in 1985-86 further caused a decline in deaths due to acute diarrhoeal diseases. Further this was integrated in 1992-93 with Child Survival and Safe motherhood (CSSM) for popularizing use of ORS/Home available fluid among mothers to reduce deaths among children under five years of age. However during 2010, it is reported that 13% of diarrhoeal deaths is contributing to the all cause of death among children under five(Lancet 2012).

IDSP database India, revealed that about 30-40 outbreaks are reported from different states each week to IDSP, NCDC, New Delhi.

Table 1: Year wise distribution of reported ADD outbreaks, IDSP, NCDC, New Delhi

Year	Total outbreaks	No Of ADD Outbreak
2008	553	230
2009	799	353
2010	990	414
2011	1675	540
2012	1584	475
2013	327 ( upto April)	65

In Odisha, 2012 IDSP surveillance data base analysis revealed that out of 100 patients that seek treatment at OPD for various ailments, five persons seek treatment for Acute Diarrhoeal Diseases each week at 1745 health facilities in the state.(DHH/SDH/ CHC/PHC(N/Area hospitals).

In 2012,ADD outbreak database analysis revealed that out of 257 outbreaks,148 were ADD outbreaks with 59 deaths. Majority of the outbreaks were reported from Southern & Northern

revenue division districts. Of which 88% of the outbreaks are attributable to unsafe water, lack of environmental sanitation, poor personnel hygiene, poor connectivity, delayed referral, low community awareness & weak intersectoral Convergence.

ADD outbreaks can be prevented or else cases & deaths due to diarrhoea can be reduced by thorough preparedness at district & sub district level such as preventive disinfection, preventive maintenance of drinking water sources, community awareness, early case management, timely referral & environmental sanitation.

In the event of an Acute Diarrhoeal Outbreak, the response has to be anchored around a well thought out micro-plan for preventing further spread and contain the outbreak.

## **2. Objective**

1. To estimate the magnitude of the problem
2. To find out the source of infection and cut off further transmission
3. To institute Preventive & Control Measures in the affected area.
4. To advocate for further follow up action to prevent further outbreaks.

The following action points are to be implemented at District & sub district level

## **3. Disease Surveillance**

### **3.1. Evidence Based Surveillance**

- Develop a spot-map by plotting cases to find out the geographic extent of spread and clustering of the cases.
- Enumerate the affected villages and estimate the population at risk
- Identify the sources of drinking water and nearby health facilities
- Conduct House to house survey for identification of cases by adapting or deriving the standard case definition as per WHO guidelines.

### **3.2. Case Definition**

- In the case of a probable cholera outbreak all the subsequent cases meeting the clinical case definition:- “Acute Watery Diarrhoea with or without vomiting in a patient aged 5 years or more should be treated as “Suspected Cholera Case”. However Laboratory confirmation is essential to declare the Outbreak as Cholera Outbreak.

**Confirmed Case:** Isolation of *Vibrio Cholera* 01 or 0139 from stool of a patient with diarrhoea

### 3.3. Role of field Functionaries during an ADD Outbreak

- Health workers(M/F) should be deployed in affected village to undertake active surveillance to detect cases early, refer to the nearby health facility if necessary, provide health education on safe drinking water, personnel hygiene, Hand washing, cleanliness & Sanitation, use of halazone tab, discourage open defecation and drinking of water from river/chua/nala/pond etc,ensure Night surveillance in the villages to refer the cases timely to the DTC/HF, and conduct disinfection of water sources etc.
- Health supervisor(M/F) to be deployed accordingly for field supervision during outbreak. Preferably one supervisor should supervise 3-5 health workers.

### 3.4. When to refer a Case of Diarrhoea ?

- In village/ward, the surveillance workers should search actively for cases with the following criteria which necessitates the patients to get admitted to the nearby health facility at the earliest-
  - **Increased number of watery stools**
  - **Neither eating nor drinking properly**
  - **Marked thirst and repeated vomiting**
  - **Sunken eyes and dry mouth and tongue**
  - **Decreased urine output**
  - **Lethargic/disoriented of unconscious**
  - **Convulsions**
  - **When skin pinch skin goes back very slowly**
  - **Blood in stool**
  - **When the Fever does not subside**

Patient with above signs must be transported immediately to the nearby health facility following standard infection control practices during transportation.

- Adjacent unaffected villages need to be kept under surveillance through health workers, ASHAs and AWWs. Health education activities and disinfection of water sources may be carried out in those villages to prevent spread of outbreak.
- Sector PHC(N) Medical Officer/ Block MO/ MO deployed from other areas must manage the cases at Diarrhoea treatment centers/ Medical Relief Centers and simultaneously supervise the containment measures in the affected area.
- Ensure Sensitization the health workers/ supervisors and supervisory medical officers (identified for surveillance supervisory duty) on :
  - Case definition

- Importance of initiation of Oral Rehydration Therapy/ Home available fluid immediately on case detection.
- Basic communication on hand wash, safe drinking water (boiled water/ chlorinated water/ disinfected Tube well water), personnel hygiene, environmental sanitation and consuming properly cooked foods.
- Techniques of chlorination of drinking water sources & other sources of use
- Modalities of administering chemoprophylaxis to close contacts of the cases.
- Expedient patients referral to the nearest identified health facility.
- Plan the mobilization of the surveillance team, identification of referral facility/ drug treatment centre for management of cases.
- Vehicles may be kept in readiness at strategic places for referral of cases from remote and inaccessible areas to the nearest health facilities.
- Sensitization of SHG members/volunteers/ASHAs/AWWs/PRI members/CBOs/NGOs/VLWs/Teachers etc in the village to propagate the health education messages, oral rehydration therapy and help in referral of cases.

### 3.5. Case Management

- Guiding principles of treatment
  - Assess the patient for hydration
  - Rehydrate and monitor the patient.
  - Maintain hydration: Replace continuing fluid losses until patient recovers
  - Treat with appropriate anti diarrhoeal drugs
  - Feed the patient orally
- (Guidelines for treatment Centre at Annexure - I)**
  - The hospitals should have adequate number of doctors and nurses to perform duty on 24X7 basis.
  - The hospital wards and corridors should frequently be cleaned with disinfectants.
  - The doctors, nurses and paramedics should use alcoholic hand rubs/soap & water / 0.05 chlorine water and use gloves.
  - If required temporary Diarrhoea Treatment Centers (DTC)/Medical Relief Centers(MRC) would be created in schools/ community halls/ Panchyat office/AWW centers etc with beds placed at least one meter apart. It should have provision for hand washing, safe drinking water, toilet, etc.
  - Requisite staff must be assigned along with logistic resources.

- The relatives of the patients should be advised to avoid washing the clothes in drinking water sources or sources like nala/chua/river/stream. Also, avoid washing/bathing of cases dying due to Cholera close to a drinking water source.

### 3.6. Chemoprophylaxis

- Chemoprophylaxis should be given only to members of a household who share/shared food and shelter with cholera patients.
- Mass chemoprophylaxis is not recommended as it does not prevent the spread of cholera and rather diverts attention and resources from other effective control measures.
- Selective chemoprophylaxis should be given to all close contacts of the case as soon as possible after the case is detected. The effect of the drug persists only for a day or two after which re-infection can occur.
- The drug of choice for chemoprophylaxis is Doxycycline for adults given in a single dose of 300mg. Tetracycline 500mg two times a day for three days is also recommended.

**Table 1: Assessment of dehydration**

Signs	Mild Dehydration	Severe Dehydration
Patient's appearance	Thirsty, alert	Drowsy, Limp cold, Sweaty may be comatose.
Radial Pulse	Normal rate and volume	Rapid, Feeble, sometime impalpable
Blood Pressure	Normal	Less than 80 mm Hg, may be unrecordable
Skin elasticity	Pinch retracts immediately	Pinch retracts slowly (taking more than 2 Seconds)
Tongue	Moist	Very dry
Anterior Front nalle	Normal	Very sunken
Urine flow	Normal	Little or none
% body weight loss	4-5%	10 % or more

### 3.7. Command and Control

- A control room, to function on 24 x 7 basis at District / Block HQ for close monitoring & supervision of the containment measures being implemented in the field.
- DSMO/ADMO (PH) to give feedback to the higher and lower levels for effective management of an outbreak

#### **4. Disinfection of Water Sources**

- Ensure sustained chlorination of water sources in the affected villages/wards
- Discourage use of water from Nala/Chua/stream/river/Pond for drinking purposes
- Encourage use of Halazone Tab to make the water safe for drinking purposes.

#### **5. Logistics**

- Ensure adequate stock of ORS, Bleaching powder/ Halazone Tablets; antidiarrhoeals, IV Fluids (Ringer Lactate / Normal Saline) and Personal Protective Equipments.
- Ensure preposition of supplies as per norms at each level of field functionaries like ASHA/AWW/HW and at each health facilities to prevent stock outs.
- The required stock & store to be received from SDMU, Bhubaneswar/district warehouse. The daily inventory status to be maintained by the pharmacist I/C.

#### **6. IEC/BCC activities**

##### **6.1. Communicate risk to the community**

- Disseminate public health messages through local channels, miking, distribution of FAQs/ leaflets/posters etc.
- Use of local electronic & print media to upscale community awareness.
- Resort to IPC to propagate health messages on hand wash, drink safe water (boiled/ chlorinated water/ disinfected tube well water), personnel hygiene, environmental sanitation, use of ORS/home available fluid, use of Halazone, consuming properly cooked foods, disinfection of dugwells/tubewell/well.

##### **6.2. Communicate to the community that:**

- With early diagnosis ,proper case management and timely referral death due to cholera can be avoided
- Take more quantity of fluids (ORS/home available fluid) as soon as diarrhoea occurs.
- Demonstrate ORS Preparation to ASHAs/AWWs/SHGs/PRI Members/CBOs/Teachers/VLWS/NGOs etc to popularize use of ORS among community.

##### **6.3. The specific messages should focus on:**

- Washing hands.
  - Before and after use of toilet
  - Before preparing food
  - Before eating feeding the children



- Boil water for drinking or chlorinate water as advised
- Use of Tubewell water( disinfected)
- (Rendering Drinking water safe at annexed at Annexure - II)**
- Store water safely
- Use Toilets/ latrines and safe disposal of human excreta.
- Use of properly cooked food (void uncooked food) and practice reheat of stored food before eating
- Cleanliness & Sanitation of Premises

**(Health Education messages in English & Oriya placed at Annexure -III)**

### **7. Monitoring &Supervision**

- Daily supervision& hand holding support may be given to theSurveillance workers involved in preventive and control measures in the field

### **8. Laboratory Surveillance**

- Water & rectal swab samples to be collected and sent to the designated state referral laboratory as per Standard Operative Procedure.( Annexure – V)

### **9. Reporting**

The reporting should include:

- Early warning signal Report/Outbreak alert within 48 hours
- Daily situational report with line list of cases & deaths, lab sample collected
- INTERIM outbreak investigation report with Time,Place& person analysis within seven days
- Final Outbreak Report after the Outbreak is declared to be over
- Cross notification to neighboring areas
- Augment reporting from the private sector (even the unorganized)

Line listing of Acute Diarrhoeal cases at PHC/ CHC and treatmentcentre, block reporting format and district reporting format are annexed at Annexure- IV (Form – I,II&III)

### **Ineffective control measures**

Efforts to control cholera through mass chemoprophylaxis, vaccination and travel & trade restrictions are ineffective in controlling cholera.

## 10. LEVEL/TRIGGER EVENTS /DESIGNATED PERSONS/ACTION POINTS&SOURCE OF FUNDS

Level	Disease/Syndrome	Trigger events	Designated person	Action points	Source of funds/Logistics
Village/ Ward/Sub- centre	Acute Watery Diarrhoea  Def <sup>n</sup> : Passage of three or more loose or watery stools in the past 24 hours with or without dehydration  OR  Passage of single or voluminous watery stool.	<ul style="list-style-type: none"> <li>• A single case of severe dehydration/ death in a patient &gt;5 years of age with diarrhoea.</li> <li>• More than 10 houses having at least one case of diarrhoea irrespective of age per village or an urban ward.</li> </ul>	<ul style="list-style-type: none"> <li>• ASHAs</li> <li>• USHAs</li> <li>• AWWs</li> <li>• Health Workers (M/F)</li> </ul>	<ol style="list-style-type: none"> <li>1. Conduct house to house survey in the village/ ward for new cases as per adopted case definition.</li> <li>2. Maintain as per standard case definition the line list of cases &amp; deaths</li> <li>3. Treat cases with ORS/appropriate anti-diarrhoeals if required.</li> <li>4. Refer to DTC /PHC/CHC/SDH/DHH/AH/MCH, if dehydration persists/loose motion continues/ case doesn't pass urine for <math>\geq 5</math> hrs. / any other danger signs seen</li> <li>5. Distribution of ORS/ Halazone for domestic use.</li> <li>6. Conduct preventive disinfection of drinking water sources (tube well/ well).</li> <li>7. Inform the RWSSdeptt. for repair of defunct tube wells if any with the help of SEM(Self Employed Mechanic).</li> </ol>	For immediate referral, small purchases/ repair of tube well/ cleaning operation/ and health education activities, the required funds can be met from GKS/ Sub centre untied fund.

				<p>8. Ensure proper sanitation in the village in respect of general environmental sanitation, drainage, waste disposal.</p> <p>9. Health Education for hand washing, drinking boiled/ chlorinated/ tube well water, personnel hygiene ,care of other patients/contacts at home, preparation &amp; use of ORS/Home available fluids.</p> <p>10. Group meeting can be undertaken at village/ward level to propagate messages on health education.</p> <p>i. Not to defecate or wash soiled clothes near water sources.</p> <p>ii. Discourage use of water from other sources for drinking purposes ( Nala/Chua/river/Stream)</p> <p>11. Inform to MO /PHC/CHC/Sector MO regarding cases &amp; deaths</p> <p>12. Co-ordination with SHG, PRI, CBOs, Teachers, local NGOs, GKS, representatives of the community.</p>	
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Level	Disease/ Syndrome	Trigger events/Analysis of data /Paper clipping/Key informants	Designated person	Actions	Funds/Logistics
Block / Sector	<p>Acute Watery Diarrhoea</p> <p>Def<sup>n</sup>: Passage of three or more loose or watery stools in the past 24 hours with or without dehydration</p> <p>OR</p> <p>Passage of single or voluminous watery stool.</p>	<ul style="list-style-type: none"> <li>• A single case of severe dehydration/ Death in a patient &gt;5 years of age with diarrhoea.</li> <li>• More than 10 houses having at least one case of diarrhoea irrespective of age per village or an urban ward.</li> <li>• Unusually higher rising trend of diarrhoeal disease in the past week.</li> <li>• Increased hospital admission if several cases.</li> <li>• Clustering of cases in time and place.</li> <li>• Information by key informants about</li> </ul>	<ul style="list-style-type: none"> <li>• Medical Officer / Block RRT (MO, Supervisor (M/F) / LT and PHEIO)</li> <li>• Sector MO/ Ayush MO</li> <li>• MHU</li> <li>• BPO / BADA / VS clerk</li> </ul>	<ol style="list-style-type: none"> <li>1. Verify the existence of outbreak from ANM, ASHA, AWW, key informants and Health worker(M/F)</li> <li>2. Confirmation of the outbreak by conducting interview of cases and other stake holders etc.</li> <li>3. Active search for cases by Block RRT adopting proper case definition/ clinical diagnosis.</li> <li>4. Descriptive analysis with regard to time, place &amp; person.</li> <li>5. Assess the magnitude of the problem and estimate the population at risk</li> <li>6. Find the source of infection and cut off transmission.</li> <li>7. Arrange for management of cases in the village/temporary diarrhoeal treatment centre/Health institution as per the situation. Selective chemo prophylaxis to close family and social contacts only.</li> </ol>	<p>Provision has been made for</p> <ul style="list-style-type: none"> <li>• mobility support,</li> <li>• opening of medical relief centers,</li> <li>• For immediate referral,</li> <li>• TA/DA for Block RRT/Others during outbreak</li> <li>• Local purchase of essential medicines and disinfectants</li> </ul>

		clustering of cases.		<p>8. Maintain the line listing of cases &amp; deaths.</p> <p>9. Sensitization of health workers/others up to (ASHA/AWW/SHG/PRI members/ CBOs/NGOs) to manage the case and their role towards the patients.</p> <p>10. Collection of stool samples/ water samples for Lab diagnosis.</p> <p>11. Adopt infection control practices at DTC/ MRC/Health Facility.</p> <p>12. Ensure safe drinking water /Chlorination of drinking water resources (well/ tube well).</p> <p>13. Ensure IEC activities. Propagate health education messages on hand wash, safe drinking water, Personnel hygiene &amp; Cleanliness, environmental sanitation use of ORS &amp;Halazone and consume properly cooked foods. Soap may be distributed for hand washing.</p> <p>14. Assess drug &amp; logistics position, Inform district health functionaries to ensure availability of buffer stock of drugs, logistics and disinfectants.</p>	<ul style="list-style-type: none"> <li>• Health education activities</li> <li>• Welfare activities</li> <li>• Other contingencies for administrative expenses.</li> </ul> <p>For mitigation of natural calamities like Flood, Cyclone and epidemics under mission flexi pool, NRHM. However initially local RKS fund may be utilized for the purpose to</p>
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				<p>15. Mobilization of surveillance team(Block RRT) from within the block to the affected area</p> <p>16. Dedicated Vehicles(Ambulance/MHU) for referral of patients to diarrhoeal treatment centre/ HF.</p> <p>17. Vehicles with paramedics and drugs may be placed at strategic places to transfer the patients round the clock.</p> <p><b>18. Ensure Night surveillance in the villages to refer the cases timely to the DTC/HF.</b></p> <p>19. Undertake active surveillance, health education and disinfection of drinking water sources in surrounding villages.</p> <p>20. Arrangements for supervision and monitoring the field activity.</p> <p>21. Functioning of control room 24x7 with contact no. and contact person : to monitor surveillance teams, mobility of MHU, referral vehicles, stock position and complete information on morbidity and mortality.</p>	save delay.
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				<p>22. Submission of daily situation report in the prescribed format. BPO/BADA/VS clerk to help the MPHS (M) to consolidate the report and comply.</p> <p>23. Cross notification to the bordering blocks.</p> <p>24. Sensitization of GKS/ SHG members/ Volunteers/ community representatives to propagate the health education messages like hand wash, safe drinking water , oral rehydration therapy and help in referral cases. Identification of key informants as &amp; when required.</p> <p>25. Procurements of drugs, logistics, disinfectants and consumables as and when required if the same is not available at district ware houses.</p> <p>26. Incentives to persons accompanying the cases to DTC.</p> <p>27. All vehicles of the department should be pressed into service or else if required vehicles may be hired locally.</p> <p>28. Co-ordination with other line departments like revenue,</p>	
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				W&CD,S&ME, Forest, RWSS, RD, H&UD,ST &SC. Panchayati raj for identification of GP level Nodal officer, oversee active surveillance and referral of cases when required, ensure disinfection and health education activity etc	
District	<p>Acute Watery Diarrhoea</p> <p>Def<sup>n</sup>: Passage of three or more loose or watery stools in the past 24 hours with or without dehydration</p> <p>OR</p> <p>Passage of single or voluminous watery stool.</p>	<ul style="list-style-type: none"> <li>• Information on Trigger events/ Early Warning Signal report from block</li> <li>• Sudden unusual increase in cases/ information of death</li> <li>• Increase incidence of hospital admissions.</li> <li>• Clustering of cases in time and space.</li> <li>• Information from local vernacular dailies.</li> <li>• Information from community representatives and other key informants.</li> </ul>	<ul style="list-style-type: none"> <li>• District Surveillance Officer (ADMO – PH/DSMO)</li> <li>• District RRT (DSO, other programme officers, Epidemiologist s/Clinician, lab personnel &amp; IEC personnel )</li> </ul>	<ul style="list-style-type: none"> <li>• Verification of the existence of outbreak.</li> <li>• Outbreak investigation by district RRT.</li> <li>• Facilitate laboratory confirmation.</li> <li>• Identify Nodal officer for the block or zone.</li> <li>• Mobilization of staffs/ teams/ vehicles from within the districts or request state for additional support as &amp; when required</li> <li>• Ensure pre-positioning of drugs, logistics, disinfectants and consumables.</li> <li>• Co-ordination with RWSS Dept. to chlorinate drinking water sources (tube well/ pipe water supply system and conduct preventive disinfection wherever required.</li> <li>• Make the defunct tubewell functional and conduct preventive disinfection wherever</li> </ul>	<p>Provision has been made for</p> <ul style="list-style-type: none"> <li>• Mobility support</li> <li>• Opening of medical relief centers/DTC</li> <li>• For immediate referral of cases</li> <li>• TA/DA to / DSMO/ADM O (PH)/Dist RRT/Others during outbreak.</li> </ul>



				<p>required. In emergency situation safe drinking water may be provided through water tankers at villages/ward and health institutions etc.</p> <ul style="list-style-type: none"> <li>• Monitoring of response activities like active surveillance, case management, disinfection and health education etc on daily basis.</li> <li>• Ensure the functioning of diarrhoeal treatment centers with trained manpower following standard treatment guideline and infection control practices.</li> <li>• Functioning of control room 24x7 with telephone no. and contact person.</li> <li>• District information bureau need be activated to undertake extensive health education activities on safe drinking water, hand wash, disinfection and environmental sanitation, use of ORS &amp;halazone through IPC, miking, print media and electronic media etc.</li> <li>• Strengthen surveillance to collect daily information on cases and deaths from the</li> </ul>	<ul style="list-style-type: none"> <li>• Local purchase of essential medicines and disinfectants</li> <li>• Health education activities</li> <li>• Welfare activities</li> <li>• Other contingencies for administrative expenses.</li> </ul> <p>For mitigation of natural calamities like Flood, Cyclone and epidemics under mission flexi pool, NRHM. So</p>
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				<p>affected area as well as surrounding unaffected villages/wards and blocks.</p> <ul style="list-style-type: none"> <li>• Geographic mapping of cases &amp; deaths to monitor the spread of the disease.</li> <li>• Monitor the trend of the disease to assess the burden of disease and impact of containment measures in the affected area</li> <li>• Reporting of daily epidemic situations to the higher levels and giving feedback to the lower levels</li> <li>• Cross notification to bordering districts.</li> <li>• Procurement of drugs, logistics, disinfectants, from Central ware house and ensure the availability of the same to all the lower levels in the district to avoid stock out</li> <li>• Provide vehicle (Ambulance/MHUs) for referral of cases and surveillance team (District RRT/Block RRT).</li> <li>• Sensitization and training to health workers for cases management and IEC/BCC activities</li> <li>• Ensure that the staff and person</li> </ul>	<p>funds may be provided to blocks and district public health authority to facilitate smooth functioning.</p>
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				<p>accompanying the patients that they get their DA/incentives</p> <ul style="list-style-type: none"> <li>• Ensure that wherever required the patients are provided with saris, dhotis and soap etc.</li> <li>• Co-ordination meeting under district magistrate and Collector involving other line departments like Revenue, RD,RWSS,PHED, Municipalities and local bodies, W&amp;CD, S&amp;ME, ST&amp;SC,PRI Forest, I&amp;PR to facilitate response activities by improving communication, ensuring safe drinking water, providing health education and monitoring supervision of the response activities.</li> <li>• Ensure solid waste management (Collection, segregation and transport) at all levels ( village/ward) to prevent contamination of food and water</li> </ul>	
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**GUIDELINE FOR DIARRHOEA TREATMENT CENTRE**

In the case of a confirmed cholera outbreak, all subsequent cases meeting the clinical case definition (Acute watery diarrhoea, with or without vomiting in a patient aged 5 years or more) should be treated as cholera cases.

The following protocol should be strictly followed in all sites (PHCs, SC, or other temporary facilities) managing cases.

**Treatment:** (The attached treatment protocol must be posted in all sites)

1. Every new case should be recorded in the line list with: Name and Full address, Village, Sex, Age, date of onset of symptoms, Treatment (ORS / Antibiotic / IV Fluids), and Outcome (Cured/ Died/LAMA/Referred).
2. ORS should be given immediately to all cases. Nearly 80 to 90% of the patients can usually recover if treated with oral rehydration solution without intravenous therapy and antibiotics.
  - Give 100ml/ kg body weight of ORS solution in the first 3-6 hours to correct dehydration.
  - If the patient is thirsty and wants to drink more, allow to drink.
  - If the patient vomits after giving ORS solution, wait for few minutes and then again give ORS solution
  - After rehydration has been achieved, continue giving ORS solution for replacement of ongoing losses.
3. The condition of each patient should be regularly monitored for signs of dehydration. If the patient's condition deteriorates, or else develops the danger signs of diarrhoea mentioned before then the case is to be immediately referred and treated at the nearby health facility.
4. Antibiotics/ antidiarrhoeals should be given to all patients as per need of case.

## Antibiotics of Choice

Antibiotics of Choice	Alternatively
<p><b>Doxycycline</b></p> <ul style="list-style-type: none"> <li>Adults : 300mg once</li> </ul> <p>Or</p> <p><b>Tetracycline</b></p> <ul style="list-style-type: none"> <li>Children: 12.5mg/kg (4 times a day X 3 days)</li> <li>Adults: 500mg (4 times a day X 3 days)</li> </ul> <p><b>Trimethoprim/ Sulfamethoxazole</b></p> <ul style="list-style-type: none"> <li>Children : TMP 5 mg/kg &amp; SMX 25mg/ kg twice a day for 3 days</li> <li>Adult : TMP 5 mg/kg and SMX 25mg/ kg twice a day for 3 days</li> </ul>	<p><b>Azithromycin</b></p> <p><u>Children:</u> 20 mg/kg, once</p> <p><u>Pregnant Women:</u> 1g/once</p>

**\*Based on WHO guidelines and Antibiogram 2007**

**During 2010, the antibiogram revealed that *V. Cholerae* are mostly**

- **Sensitive to:-**

Azithromycin / Doxycycline / Tetracycline / Ciprofloxacin / Norfloxacin / Ofloxacin / Chloramphenicol / Gentamycin

- **Resistant to:-**

Streptomycin / Erythromycin / Co-trimoxazole/ Ampicillin / Nalidixic acid / Furazolidone

5. Patients who are severely dehydrated must receive IV fluids. The preferred solution is Ringer's Lactate; alternatively, Normal Saline could be used.

**(Plain glucose solutions are ineffective and should not be used)**

Quantity	Infants (< 1 yr)	Older Children / Adults
30ml/ kg body wt. 30ml/ kg body wt.	First 1 hour Next 5 hours	First 30 min Next hours
100ml/ kg body wt.	6 hours	3 hours
Reassess clinical condition very 1-2 hours; if hydration is not improving, refer the patient	Assess for signs of overload as patient recovers – evidence of swelling, shortness of breath or puffiness of eye lids etc; stop the IV fluid	If a patient can drink, start ORS solution along with IV infusion. When signs of severe dehydration disappear, continue with ORS. If condition does not improve then refer.

### **Patient Escort**

1. No more than one person should stay with each patient in the facility to prevent overcrowding. No other unauthorized persons should be allowed inside the diarrhea treatment facility/center.
2. Chemoprophylaxis (Doxycycline 300g/once) could be given to patient escorts and close contacts.
3. **No mass chemoprophylaxis should be given.**
4. Provision should be made outside the treatment facility for other persons accompanying the patient. GKS/Untied funds / RogiKalyanSamiti funds may be utilized for this purpose.

### **Prevention / Hygiene**

Additional measures are needed to ensure hygienic conditions in the Diarrhoea Treatment Centre/Medical relief Centersto prevent the spread of infection.

1. Suspected Cholera patients should be isolated from all other patients.
2. Safe water supply of 40-50 lits. per patient must be ensured.
3. All medical staff working with patients should be supplied with aprons and gloves.
4. Ring, bangles and other personal items should not be worn while on duty.
5. All Support staff/ Volunteers helping with cleaning should be supplied with gloves, aprons, goggles and gum boots.
6. Adequate water/ places for washing of hands with soap and 0.05% chlorine solution must be ensured –at the entry points of every cholera ward.
7. At least 1 meter (3 feet) should be ensured between each patient bed. Additional space may be made outside the health facility in vacant buildings or temporary tents.
8. All patient excreta/ vomitus collected in buckets should be treated with chlorine solution and disposed in pit latrine or hole dug for this purpose – well away from any drinking water source. Waste must not be put into rivers or canals.
9. All surfaces in contact with patients as well as their clothing should be treated with 0.05% chlorine solution in designated area away from water suppliers.
10. Dead bodies should be washed with 0.5% chlorine solution and the mouth and anus closed with chlorine soaked cotton swabs.

<b>Chlorine Solutions</b>	<b>How to Prepare</b>	<b>Where to use</b>
<b>For 0.5% Chlorine Solution</b>	Bleaching Power (30%): Add 16gm or 1 tablespoon to one lt. of water  Calcium hypochlorite (70%): Add 7gm. Or ½ tablespoon to one lt. of water	To disinfect:  Excreta / vomitus, dead bodies
<b>For 0.05% Chlorine Solution</b>	Bleaching Power (30%): Add 16gm or 1 tablespoon to 10litres of water  Calcium hypochlorite (70%): Add 7gm. Or ½ tablespoon to 10 litres of water	To disinfect: Washing hands/ gloves floors, clothing / bedding/ equipment

**RENDERING DRINKING WATER SAFE**

- Boiling for 1 minute will kill or inactivate V. Cholera and other common organisms that cause diarrhoea. Boiling is , however, expensive and not practical especially in areas where outbreaks of Cholera and other diarrhoeal diseases are most likely to occur because of fuel shortage
- When surface water/ hand pump water is contaminated, this source should be closed for drinking water purposes. This information should be prominently displayed indicating that the source of water is not fit for use. In Delhi, shallow hand pumps are painted red. Alternate water source should be provided, indicating water tankers during the course of an outbreak.
- Where it is feasible chlorination of the water source, such as a draw well should be immediately organized.
- In urban areas as well as semi urban or rural areas where piped water exists immediate co-ordination with the agency responsible for water supply should be organized to ensure chlorination of water source and repair of water pipes, if indicated
- Chlorine releasing tablets may be used for domestic purposes in the area of an outbreak
- Community should be encouraged to use narrow mouthed containers for water storage to reduce secondary transmission in the family.

**CHLORINATION OF DRINKING WATER**

**PREPARATION OF STOCK SOLUTION**

(1% solution in 1 litre of water)

Add to one litre of water any of the following.

- |  |    |         |
|--|----|---------|
| • Calcium hypochlorite (70%)                 |    | 15gram  |
|  | OR |         |
| • Bleaching powder or Chlorinated lime (30%) |    | 33 gram |
|  | OR |         |
| • Sodium hypochlorite (5%)                   |    | 250 ml  |
|  | OR |         |
| • Sodium hypochlorite (10%)                  |    | 110ml   |

The stock solution should be used within one month. It should be kept in a closed container in a cool place away from light.

**(Add stock solution to water)**

- 0.6ml or 3 drops    1litre of water
- 6ml                    10litres of water
- 60ml                   100litres of water

Allow water to stand for 30 minutes before using. The residual chlorine level should be 0.2 to 0.5mg/litre.

**DOMESTIC CHLORINATION OF DRINKING WATER**

- Crush commercially available chlorine – releasing tablet
- Put in the water container with 20litres of water
- Allow to stand for 30 minutes
- Use water with 24 hours
- 4mg of Halazone tablet to be added in one liter of water.

*Containers with a narrow mouth are recommended for the storage of drinking water.*

**RECOMMENDED MINIMUM CHLORINE LEVELS  
IN WATER DISTRIBUTING SYSTEMS**

- 0.5mg/litre:– at all sampling points in a piped water system
- 1.0 mg/ litre:– at stand post
- 2.0mg/ litre:– in tanker trucks at filling

**DISINFECTION OF WELLS BY CHLORINATION**

- The most effective method of disinfecting wells is chlorination by fortnightly and on regular basis during disaster like flood or outbreak period.
- Measures the depth of the water column by lowering a stone tied to a dry rope in the well. The length of rope in meters which gets wet will give the depth of the well. Measure the diameter of well in meters. The volume of water in the well calculated by using the formula given below:

$$\text{Volume in litres} = \frac{3.14 \times d^2 \times h}{4} \times 1000$$

D = diameter of well and h = depth of water in meters



- Approximately 2.5 gms of pure quality bleaching powder is required to disinfect 1000 liters of water. (One matchbox full contains about 10gms of bleaching powder)
- The required quantity of bleaching powder is placed in a bucket with not more than 100gms in one bucket. If the volume of the water is more, use two or more buckets. Make a paste by adding one litre of water in it. More water is added till the bucket is nearly 3/4<sup>th</sup> full. Then, stir the contents with a rod or wooden stick and allow 5-10 minutes for sedimentation of lime. The supernatant solution containing chlorine is transferred to another bucket and discarding the sediment. This sediment should not be poured into the well as it will increase the hardness of the well water.
- The bucket containing the chlorine solution is lowered some distance below the water surface and the well water is agitated by moving the bucket violently both vertically and laterally. This should be done several time so that the chlorine solution mixes intimately with the water inside the well.
- A contact period of one hour is allowed before the water is drawn for use. Therefore, it is better to chlorinate the well one hour before the villagers come to draw the water or after they have drawn it so that chlorine remains in contact with the water for required time.
- Bleaching powder should be stored in a cool, dark and dry place in a closed anti-corrosive container as it is an unstable substance, on exposure to air, light and moisture, it rapidly loses its chlorine content.

**KEY MESSAGES FOR HEALTH EDUCATION**

***“Boil Your Water, Cook Your Food -Wash Your Hands”***

**1. PERSONAL HYGIENE**

- Wash your hands with soap, ash or lime :
  - before cooking and eating
  - before feeding your children
  - after use of latrine or cleaning your children after they have used the latrine.
  - After taking care of ill patients
- Wash all parts of your hands: front, back, between the fingers thoroughly.
- Use of latrine for defecation should be practiced regularly.
- Keep the latrine clean.

**2. FOOD**

- Raw food should be properly cooked.
- Eat cooked foods immediately.
- Store cooked food carefully in refrigerator.
- Reheat cooked food thoroughly, if used.
- Don't mingle raw food with cooked food.
- Eat fruit and vegetable after peeling of yourself.
- Keep all kitchen surfaces clean.
- Clean your chopping board with soap and water.
- Wash your utensils and dishes with soap and water.
- All the vegetables and/ or fruits should be properly washed before peeling or cooking.

***“Cook it – Peel it– Wash it”***

**3. SAFE DRINKING - WATER**

- Even if it looks clear, water can contain germs.
- Boil or add drops of chlorine to the water before drinking.
- Keep drinking water in a clean, covered pot or bucket or other container with a small opening and a cover, which should be used within 24 hours of collection.
- Pour the water from the container – do not dip a cup into the container.
- If dipping into the water container cannot be avoided, use a cup or other utensil with a handle.

#### **4. WELLS**

- Do not defecate or urinate in or near a source of drinking water.
- Do not wash your clothes, or pots and utensils in the source of drinking-water (Streams, river,nala/pond/ chuas)
- Unused open wells must be covered to avoid contamination.
- One dedicated bucket to be used to collect water should be hung up when not in use – they must not be left on a dirty surface.
- The area surrounding a well or a hand pump must be kept as dry and clean as possible.
- Get rid of refuse and stagnant water around a water source.

#### **5. FOR PEOPLE WITH DIARRHOEA**

- The majorthreat is dehydration
- Quick action to be initiated without being panic.
- Drink Oral Rehydration Solution prepared with boiled or chlorinated water.
- Go immediately to the health centre and ensure drinking ORS continuously on the way if the patient is conscious and alert

#### **6. TAKING CARE OF PATIENTS**

- Wash your hands after taking care of patients either by touching them, their stools/ vomit or clothes.
- Avoid contaminating a water bodies by washing patient's clothes in it.
- Stools and vomitus of a cholera patient can be disinfected with bleaching powder solution/hypochlorite solution).
- Disinfect the patient's clothing and bedding with a solution of chlorine (0.05%) or by stirring them in boiling water or by drying them thoroughly in the sun before and after normal washing.

**LINE LIST OF ACUTE DIARRHOEAL CASES / DEATHS**

Block Name:

Reporting Date: \_\_\_\_\_

Reporting site: Hospital / CHC / PHC / SC / CAMP / Treatment Center : \_\_\_\_\_

Sr. No	Name	Father's / Husband's Name	Gram Panchayat	Village	Block of residence	District of residence	Age (Yrs)	Sex (M/F)	Date of onset of diarrhoea	Outcome (Recovered / Referred / Died)	Treatment given (mark with tick <input type="checkbox"/> as appropriate)		
											ORS	IV Fluid	Antibiotics

Daily Block Reporting Form

Reporting Date: \_\_\_\_\_

Reporting Block: \_\_\_\_\_

Block Name	Number of Gram Panchayats			Number of Villages			On the Day						Progressive						
	Already affected	Affected Today	Total affected	Already affected	Affected Today	Total affected	Cases			Deaths			Cases			Deaths			
							<5 Yrs	≥ 5 Yrs.	Total	<5 Yrs	≥ 5 Yrs	Total	<5 Yrs	≥ 5 Yrs.	Total	<5 Yrs	≥ 5 Yrs	Total	

**Information of reporting block**

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Information of cases belonging to other blocks**


Ensure there is no duplication while compiling this report

This report & Acute Diarrhoea case line list is to be compiled at block & sent to district by 5.00 P.M everyday

Signature

Daily District Reporting Form

Reporting Date: \_\_\_\_\_

Reporting District: \_\_\_\_\_

Block Name	Number of Gram Panchayats			Number of Villages			On the Day						Progressive						
	Already affected	Affected Today	Total affected	Already affected	Affected Today	Total affected	Cases			Deaths			Cases			Deaths			
							<5 Yrs	≥ 5 Yrs.	Total	<5 Yrs	≥ 5 Yrs.	Total	<5 Yrs	≥ 5 Yrs.	Total	<5 Yrs	≥ 5 Yrs.	Total	

**Information of blocks belonging to other districts**

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Ensure there is no duplication while compiling this report

This report & will be compiled everyday and will reach the State HQ by 12 noon of the next day. State will compile the data and present it to Higher Authority by 3.00 P.M of the next day.

Signature

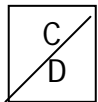
**Date / Village wise No. of Cases / Deaths due to Acute Diarrhoeal Disease Outbreak in the month\_\_\_\_\_**

Name of the block:\_\_\_\_\_

Name of the District:\_\_\_\_\_

SL No	Name of the Village	G. P/ S C s	Date																																			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					

**N.B:-**



C:- Cases  
D:- Deaths

**STANDARD OPERATIVE PROCEDURES FOR LABORATORY DIAGNOSIS OF ACUTE ADD.**

**What is CHOLERA?**

Cholera is an acute diarrhoeal infection caused by ingestion of the bacterium *Vibrio cholerae*.

**How it is transmitted?**

Transmission occurs through direct faecal oral contamination or through ingestion of contaminated water or food.

***Notification of cholera cases***

1. Cholera is endemic in India and several outbreaks of the disease have been reported. Because cholera has the potential of rapid spread leading to an acute public health problem, special attention is required to be given to the surveillance and prompt follow up action on reported cases of cholera.
2. A suspect case of cholera must be notified immediately by messenger, telephone or fax to the local health office. Weekly notification of confirmed cholera cases is required to be made by the state health authorities to the Directorate General of Health Services:
3. If appropriate measures are taken, cholera remains restricted to a limited habitation. Therefore, reporting of taluka and district help in identifying the affected area.
4. The first suspect case of cholera in the area must be notified immediately to the local health officer. Laboratory confirmation should be obtained at the earliest opportunity and the results intimated to local health office as soon as these become available.

**Clinical Case Description**

- A patient with acute watery diarrhoea and severe dehydration (lethargy, altered consciousness and decreased urine output) with or without vomiting.
- It is characterized by a sudden onset of acute watery diarrhoea that can lead to severe dehydration which results in death and kidney failure.

**Incubation Period**

The incubation period is from two hours to five days. About, 75% of people infected with cholera do not develop any symptoms. However, the cholera vibrios persist in their faeces for 7 to 14 days and are shed back into the environment, potentially infecting other individuals.



Cholera is an extremely virulent disease that affects both children and adults. Unlike other diarrhoeal diseases, it can kill healthy adults within hours. Individuals with lower immunity, such as malnourished children or people living with HIV, are at greater risk of death if infected by cholera.

### ***Case classification***

#### ***Probable:***

- a. *In an area where the disease is not known to be present:* Severe dehydration or death from acute watery diarrhoea in a patient aged 5 years or more
- b. *In an area where Cholera is endemic:* Acute watery diarrhoea, with or without vomiting in a patient aged 5 years or more.
- c. *In an area where there is a Cholera epidemic:* Acute watery diarrhoea, with or without vomiting, in any patient.

***Confirmed:*** A probable case that is laboratory confirmed

***Laboratory criteria for diagnosis:*** Isolation of *Vibrio cholerae* 01 or 0139 from the stools samples of any patient with diarrhoea.

#### ***Key issues***

1. Treatment of cholera does not depend on the results of laboratory examination. However, laboratory examination of specimens from the first few suspected cases is important to confirm the diagnosis and to determine the characteristics of the organism.
2. A sufficient number of stool specimens should be examined to identify the causative organism. Once the presence of cholera is confirmed, *it is not necessary to examine specimens from all cases or contacts*. In fact, this should be discouraged since it unnecessarily burdens the laboratory and is not required for effective treatment.
3. Specimens should be collected before the patient has received any antibiotics.
4. Full particulars of the patient(s) from whom samples have been collected must be sent along with the samples as many factors can influence the results of the laboratory tests. The information that should accompany each stool sample is given below:
  - Name, age, sex
  - Name of mother or father
  - Address
  - Date of onset of symptoms
  - Provisional diagnosis
  - Clinical outcome (recovered, under treatment, dead, not known)
  - Antibiotic received prior to collection of sample - Y/N/not known
  - Date of sample collection

## **COLLECTION, TRANSPORT & STORAGE OF SPECIMENS**

The appropriate selection, collection, rapid transport of specimens is very important for etiological diagnosis and case management in the community. It is the responsibility of district health authorities to provide complete and accurate specimen management information to the health care workers who have the primary responsibility of collecting the specimens. The information provided to include safety, selection, collection, storage, labeling, transportation and acceptability.

### ***Bio-Safety Measures***

Bio-safety measures needs to be adopted for personnel safety of the healthcare worker collecting the sample.

1. During specimen collection wear personal protective equipment such as gloves, aprons , mask and / or goggles.
2. Use leak-proof specimen containers (CBT Media) and transport them in vaccine carrier/ leak proof plastic bag carrier at ambient temperature along with a lab requisition form,
3. Make sure screw-cap lids (CBT Media) are secured with adhesives & fastened evenly and securely. Do not transport leaking containers to the laboratory because test results will be compromised and it is a hazard to couriers and laboratory personnel.
4. To protect the safety of others, take care not to contaminate the outside of the specimen container or the laboratory requisition form.

### ***General specimen selection and collection guidelines:***

- Wash hands before and after the collection.
- Aseptic techniques must be employed during sample collection and to prevent the sample from being contaminated during collection.
- Collect stool specimens before the administration of antimicrobial agents.
- Collect the specimen from fresh stool sample & not from the bed pans etc.
- Make certain that the specimen is representative of the disease.
- Collect adequate volume in the swab stick, as insufficient material may yield false negative results.
- Collect the specimen in an appropriate screw capped, external threaded, unbreakable, leak-proof container provided to you.
- Ensure that the outside of the specimen container is clean and uncontaminated.

- Close the container tightly so that its contents do not leak during transportation.
- Label the container appropriately and complete the lab requisition form.
- Arrange for immediate transportation of the specimen to the state referral laboratory

### ***Storage & transportation of specimens***

In general samples should be kept at 2-8°C during storage and transport. The quality of sample can deteriorate during storage or transportation which affects the diagnostic results. Hence, special care should be taken during transport of samples to the laboratory to protect them from heating or drying.

- All specimens must be promptly transported to the laboratory, preferably within 2 hours. In case of delay the samples should be kept in vaccine carrier.
- Specimens for bacterial culture should not be stored for more than 24 hours before transport to the laboratory.
- Specimen containers relating to single case investigation should be placed in a plastic bag with an absorbent material surrounding the specimen so that even if the whole specimen leaks out, it will be absorbed.
- The lab report form should be sealed within a separate plastic bag and wrapped round the specimen or attached firmly to box of specimens.

### ***Specimen acceptability or rejection criteria***

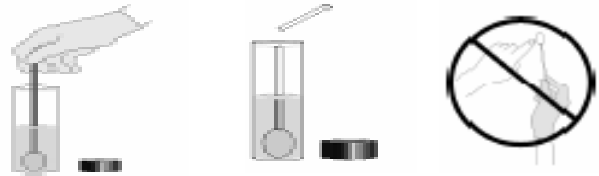
At times, specimens arriving in the laboratory may have been improperly selected, collected or transported. Processing and reporting such specimens may provide misleading information that can lead to misdiagnosis and inappropriate therapy. Consequently, the laboratory must adhere to a strict policy of specimen acceptance and rejection. The following are some examples under which samples could be rejected in the laboratory:

- No label
- Improper or leaking container
- Prolonged transport
- Insufficient quantity
- Specimen collected in an inappropriate container
- Contamination suspected
- In appropriate transport or storage

In all the above cases, immediately contact the submitting health care worker. For specimens collected by non invasive means, have a new specimen submitted, but for invasive specimens or for other samples which cannot be collected again, process the specimen only after consulting the person who obtained the specimen. Note the problem on the form and report.

### ***Labeling and identification of specimens***

Proper identification of every patient sample is as important as the quality of the sample. Each patient should be given a unique identification number. This unique identification number and



the patient name should be present on all specimens, epidemiological data forms, and the laboratory transmittal forms and used as a common reference. The sample should be labelled using pre-printed labels / glass-marking pencil / permanent markers / adhesive tape, etc. Labels should be firmly affixed to the specimen container. It should contain the following:

- Patient's name
- Identification number
- Specimen type
- Date & time of collection

Glass slides for microscopy must be labelled individually, using glass marking pencil. This should not interfere with the staining process. Each slide should bear:

- Patient's name
- Identification number
- Date of collection

### **Faecal specimen**

Faecal specimens may be collected in the early stages of a disease, when pathogens are likely to be present in the stool in high numbers i.e. soon after onset of diarrhoea (for viruses <48 hours and for bacteria <4 days), and preferably before the initiation of antibiotic therapy.

- Stool specimens should be collected in a wide-mouthed sterile container with a leak-proof screw-capped lid.
- The collected stool should be processed as soon as possible upon receipt in the laboratory.
- In case of delayed transport (> 2 hours), collect a small amount of stool on a swab and inoculate Cary-Blair transport medium.
- Stool is the preferred specimen for culture in a case of diarrhoea.
- Rectal swab may be collected for acutely ill patients, newborns or when stool specimen is not available. It is advisable to collect two swabs from each patient, one for microscopy and other for bacterial/viral studies.

### ***Materials required***

- Sterile wide mouth, external threaded, unbreakable, leak proof container
- Spatula for transferring the specimen to the container
- *Inoculation of rectal swab into Cary Blair's medium*
- Transport medium (e.g. Cary Blair's medium)

### ***Collection of rectal swab***

- Moisten 2 swabs in an appropriate transport medium (e.g. Cary-Blair).
- Insert swab 2-3 cm into rectum and gently rotate.
- Gently rotate up to 90 degrees, so that faeces covers the swab.
- Withdraw the swab.
- After collection of both swabs (one at a time), place both swabs into the same tube deep enough so that medium covers the cotton tips. Break off top portion of sticks and replace the cap
- Label the specimen and place it in a plastic bag with the appropriate request slip.

## **STOOL SPECIMEN COLLECTION**

- *Freshly passed stool samples avoid specimens from a bed pan*

*Use sterile or clean container*

- *do not clean with disinfectant*

*During an outbreak - collect from 5-10 patients*



### **Stool samples for bacteria**

#### ***Timing***

- *during active phase*

#### ***Sample amount and size***

- *fresh sample and two swabs from patients, controls and carriers (if indicated)*

### **Method**

- *Cary-Blair medium*
- *For Ag detection/PCR – no transport medium*

### Storage

- *refrigerate at 4°C if testing within 48 hours, -70°C if longer; store at -15°C for Ag detection and PCR*

### Transport

- *4°C (do not freeze); dry ice for Ag, PCR detection*

## WATER SAMPLE COLLECTION FOR BACTERIOLOGICAL EXAMINATION

### Preparation

Chlorinated water - *add sodium thiosulphate (0.5ml of 10% solution or a small crystal)*

#### Tap/ pump

- *remove attachments*
- *wipe, clean and flame outlet*
- *allow to flow (at least one minute)*

Water course or reservoir - *collect from a depth of at least 20 cm*

Dug well - *do not allow the bottle to touch the sides of the well*

### Collection

*At least 200 ml of water sample from the source*

*In sterile glass bottles OR autoclavable plastic bottles*

- *tight screw capped lid*
- *securely fitting stoppers/caps an overhanging rim*

**Case Investigation form**  
(To be filled in by the clinician/ epidemiologist)

Date :.....

Patient' s Name:

Patient' s I.D No.:

Father' s/ Husband' s Name:

Age/ Sex:

Address:

Date of onset of illness:

Date of hospitalization/ reporting to the district level:

Occupation:

Clinical signs & symptoms (with duration):

Treatment history:

Results of previous investigations (if any):

Any other relevant information:

Specimen details:

Nature of specimen (s)	Date of collection	Investigation required

Details of sender:

Signature:

Name of sender:

Address of sender:

Fax:

E-mail:

(NOTE: Please complete all the columns. Always send the sample under cold chain unless specified otherwise.)

## ତରଳଝାଡ଼ା ରୋଗର ପ୍ରତିକାର ପାଇଁ କେତୋଟି ମୁଖ୍ୟ ସନ୍ଦେଶ (ସାସ୍ତ୍ରୀକର୍ମୀ, ଅଜନଡ଼ାଡ଼ାକର୍ମୀ, ଆଶା ତଥା ସାସ୍ତ୍ରୀ ସେକ୍ସାସେବୀମାନଙ୍କ ପାଇଁ ଉଦ୍ଦିଷ୍ଟ)

### ଖାଦ୍ୟକୁ ରାନ୍ଧିବା - ପାଣି ପୁଷ୍ଟି - ହାତ ସଫାକରଣ

#### ୧. ବ୍ୟକ୍ତିଗତ ପରିଚ୍ଛନ୍ନତା -

- ହାତ ଦୁଇଟିକୁ ସାବୁନ, ପାଇଁ କିମ୍ବା ରୁନ ଦ୍ୱାରା ସଫାକରନ୍ତୁ ।
  - ☞ ଖାଦ୍ୟ ରାନ୍ଧିବା ପୂର୍ବରୁ ।
  - ☞ ଖାଦ୍ୟ ଖାଇବା ପୂର୍ବରୁ ଏବଂ ପିଲାଙ୍କୁ ଖୁଆଇବା ପୂର୍ବରୁ ।
  - ☞ ପାଇଖାନା ଯିବାପରେ କିମ୍ବା ପିଲାମାନଙ୍କୁ ସଞ୍ଚାଇଲା ପରେ ।
- ହାତର ସବୁ ଅଂଶକୁ ସଫା କରନ୍ତୁ - (ଆଗ ପଟ, ପଛପଟ, ଆଙ୍ଗୁଳିସନ୍ଧି ଏବଂ ନଖମୂଳ) ।
- ଝାଡ଼ାଯିବା ପାଇଁ ପାଇଖାନା ବ୍ୟବହାର କରନ୍ତୁ ।
- ପାଇଖାନା ସଫା କରନ୍ତୁ ।

#### ୨. ଖାଦ୍ୟ -

- କଞ୍ଚା ଖାଦ୍ୟ ଦ୍ରବ୍ୟକୁ ଭଲଭାବେ ରାନ୍ଧନ୍ତୁ ।
- ରନ୍ଧା ଖାଦ୍ୟକୁ ସଙ୍ଗେ ସଙ୍ଗେ ଖାଆନ୍ତୁ ।
- ଥଣ୍ଡା ହୋଇ ଯାଇଥିବା ରନ୍ଧା ଖାଦ୍ୟକୁ ପୁନର୍ବାର ଭଲଭାବେ ଗରମ କରନ୍ତୁ ।
- କଞ୍ଚାଖାଦ୍ୟ ଏବଂ ରନ୍ଧାଖାଦ୍ୟ ଭିତରେ ଯେପରିମିଶାମିଶି ନ ହେବ, ସେଥିପାଇଁ ଯତ୍ନବାନ ହୁଅନ୍ତୁ ।
- ନିଜେ ଚୋପା ଛଙ୍ଗାଇ ଥିବା ଫଳ ଓ ପନି ପରିବା ଖାଆନ୍ତୁ ।
- ରୋଷେଇ ଶାଳାର ସବୁ ପାର୍ଶ୍ୱକୁ ପରିଷ୍କାର ପରିଚ୍ଛନ୍ନ ରଖନ୍ତୁ ।
- ଯେଉଁ ଜାଗା ଉପରେ ପରିବା ପତ୍ର କଳାକଟି କରାଯାଉଛି, ସେସବୁ ଜାଗାକୁ ଭଲ ଭାବେ ସାବୁନ ପାଣିରେ ସଫା କରନ୍ତୁ ।

#### ୩. ନିରାପଦ ପାନୀୟ ଜଳ -

- ଜଳ ନିର୍ମୂଳ ଦିଶୁଥିଲେ ମଧ୍ୟ ଏହା ମଧ୍ୟରେ ହଇଜା ଜୀବାଣୁ ଥାଇପାରନ୍ତି ।
- ପିଇବା ପୂର୍ବରୁ ପାଣିକୁ ପୁଷ୍ଟି କିମ୍ବା ସେଥିରେ ଠୋପାଏ କ୍ଲୋରିନ୍ ଦ୍ରବଣ ପକାନ୍ତୁ । କ୍ଲୋରିନ୍ ଦ୍ରବଣ ପକାଇବାର ଅଧିକତ୍ୱ ପରେ ପାଣିକୁ ବ୍ୟବହାର କରନ୍ତୁ ।
- ପିଇବା ପାଣିକୁ ଏକ ପରିଷ୍କାର, ଘୋଡ଼ାଯାଇଥିବା ପାତ୍ର ବା ବାଲିରେ କିମ୍ବା ଅନ୍ୟ କୌଣସି ପାତ୍ର (ସୁରେଇ ପରି ମୁହଁ ସରୁ ହୋଇଥିବା ଏବଂ ଏଥିରେ ଘୋଡ଼ଣା ଥିବା) ରେ ରଖନ୍ତୁ । ପାଣି ରଖିବାର ୨୪ ଘଣ୍ଟା ମଧ୍ୟରେ ବ୍ୟବହାର କରନ୍ତୁ ।
- ପାଣି ପାତ୍ରରୁ ପାଣି ଢାଳି କରି ଆଣିବେ - ପାଣି କାଢ଼ିବା ପାଇଁ ବାହାର ଗିନା, ଗିଲାସ ବା କପ୍ପୁ ପାଣି ପାତ୍ରରେ ଭର୍ତ୍ତି କରିବେ ନାହିଁ ।



- ଯଦି ପାତ୍ରରୁ ପାଣି ଢାଳିବା ପାଇଁ ଅସୁବିଧା ଥାଏ, ତେବେ ଗିନା କିମ୍ବା କପ୍ରେ ଏକ ହ୍ୟାଣ୍ଡଲ୍ ଲଗାଇ ପାଣି କାଢିବେ ।

#### ୪. କୂଅ -

- ଜଳ ଉତ୍ସରେ ବା ଜଳଉତ୍ସ ନିକଟରେ ଝାଡ଼ା ଫେରନ୍ତୁ ନାହିଁ ।
- ଜଳ ଉତ୍ସରେ (ଝରଣା, ନାଳ କିମ୍ବା ଚୂଆ) ରେ ନିଜେ ଧୁଆଁଧୋଇ ହୁଅନ୍ତି ନାହିଁ କିମ୍ବା ବାସନ କୁସନ ତଥା ଅନ୍ୟାନ୍ୟ ପାତ୍ରକୁ ସଫାକରନ୍ତୁ ନାହିଁ ।
- ବ୍ୟବହୃତ ହୋଇ ନ ଥିବା ଖୋଲା କୂଅଗୁଡ଼ିକୁ ଘୋଡ଼ାଇ ରଖନ୍ତୁ ଯେପରି ଏସବୁ ସଂକ୍ରମିତ ହେବ ନାହିଁ ।
- କୂଅରୁ ଯେଉଁ ବାଲ୍ଟି ଗୁଡ଼ିକରେ ପାଣି କଢା ଯାଉଥିବ ସେସବୁକୁ ମଇଳା ଚଟାଣ ବା ମାଟି ଉପରେ ରଖନ୍ତୁ ନାହିଁ ।
- କୂଅ କିମ୍ବା ନଳକୂଅ ଚାରିପାଖକୁ ଯେତେ ଦୂର ସମ୍ଭବ ପରିଷ୍କାର ପରିଚ୍ଛନ୍ନ ରଖିବା ଏକାନ୍ତ ଜରୁରୀ ।
- ଜଳ ଉତ୍ସର ଚାରିପାଖରେ ପାଣି ଜମିବାକୁ ଦିଅନ୍ତୁ ନାହିଁ ।
- ରୋଗୀମାନଙ୍କୁ ସେବା କରିସାରିଲା ପରେ, ରୋଗୀଙ୍କୁ ଛୁଇଁଲା ପରେ ବା ରୋଗୀମାନଙ୍କର ମଳ, ବାନ୍ତି କିମ୍ବା ଲୁଗାପଟା ସଫାକଲାପରେ ନିଜହାତକୁ ଭଲ ଭାବରେ ଧୁଅନ୍ତୁ ।
- ରୋଗୀର ଲୁଗାପଟାକୁ ଜଳଉତ୍ସରେ ଧୁଅନ୍ତୁ ନାହିଁ । ଏହାଦ୍ୱାରା ଜଳ ଉତ୍ସ ହଇଜା ଜୀବାଣୁ ସଂକ୍ରମଣରୁ ରକ୍ଷା ପାଇପାରିବ ।

#### ୫. ଯେଉଁମାନଙ୍କୁ ଚରଳଝାଡ଼ା ହେଉଛି -

- ହଇଜାରେ ସବୁଠାରୁ ବଡ଼ ବିପଦ ହେଉଛି, ଦେହରୁ ଯଥେଷ୍ଟ ପରିମାଣରେ ପାଣି ଓ ଲବଣ ଅଂଶ ଚାଲିଯିବା ।
- ଭୟାବୁର ନହୋଇ ତୁରନ୍ତ ପ୍ରତିକାର ପାଇଁ ପଦକ୍ଷେପ ନିଅନ୍ତୁ ।
- ନିରାପଦ ପାନୀୟଜଳ (ଫୁଟାହୋଇଥିବା ପାଣି ବା କ୍ଲୋରିନ୍ ଦ୍ରବଣ ଦ୍ୱାରା ବିଶୋଧନ କରାଯାଇଥିବା) ପାଣିରେ [ଓ.ଆର୍.ଏସ୍](#) ଗୁଣ୍ଡ ମିଶାଇ ସରବତ ଡିଆରି କରି ପିଆନ୍ତୁ ।
- ସଙ୍ଗେସଙ୍ଗେ ନିକଟସ୍ଥ ସାମ୍ବ୍ୟକେନ୍ଦ୍ରକୁ ନେଇ ଯାଆନ୍ତୁ । ଯିବା ବାଟରେ ରୋଗୀକୁ [ଓ.ଆର୍.ଏସ୍](#) ସରବତ ପିଆନ୍ତୁ ।
- ହଇଜା ରୋଗୀର ମଳ ଏବଂ ବାନ୍ତିରେ ବିଶୋଧକ (ଉଦାହରଣ- କ୍ରିସୋଲ) ମିଶାଇ ବିଶୋଧନ କରିପାରିବେ ।
- ରୋଗୀର ଲୁଗାପଟା ଓ ଶେଯ ଆଦିକୁ ନିମ୍ନମତେ ବିଶୋଧନ କରନ୍ତୁ ।

ଏଥିପାଇଁ

- କ୍ଲୋରିନ୍ ଦ୍ରବଣ (୦.୦୫%) ବ୍ୟବହାର କରନ୍ତୁ ।

କିମ୍ବା

- ଫୁଟନ୍ତା ପାଣିରେ ଗୋଳାନ୍ତୁ ।

କିମ୍ବା

- ଏସବୁକୁ ସଫାକରି ଭଲଭାବରେ ଟାଣ ଖରାରେ ଶୁଖାନ୍ତୁ ।

#### କ୍ଲୋରିନ୍ ଦ୍ରବଣ (୦.୦୫%) ଡିଆରିକରାଯାଏକିପରି ?

୧୬ ଗାମବିଂଚି ପାଉଡ଼ର (ବଡ଼ଚାମଟରେ ଏକ ଚାମୁଚ) କୁ ୧୦ ଲିଟର ପାଣିରେମିଶାଇ ଦ୍ରବଣଡିଆରିକରାଯାଏ ।

# ତରଳଝାଡ଼ାରଚିକିତ୍ସା ଓ ପ୍ରତିରୋଧ

ତରଳ ଝାଡ଼ାର ପ୍ରତିରୋଧ କିପରି କରିବେ ?

- ନଳକୂଅର ପାଣି ବ୍ୟବହାର କରନ୍ତୁ । ପାଣିକୁ ଫୁଟାଇ ଥଣ୍ଡା କରି ପିଅନ୍ତୁ ।
- ଶିଶୁକୁ ଖୁଆଇବା, ଖାଦ୍ୟ ବାଡ଼ିବା କିମ୍ବା ନିଜେ ଖାଇବା ଆଗରୁ ହାତକୁ ଭଲଭାବରେ ଧୁଅନ୍ତୁ ।
- ବାସି, ପଚାସତା ଖାଦ୍ୟ ଖାଆନ୍ତୁ ନାହିଁ । ମାଛି ନ ବସିବା ପାଇଁ ଖାଦ୍ୟ ପଦାର୍ଥକୁ ଘୋଡ଼ାଇ ରଖନ୍ତୁ ।
- ପିଇବା ପାଣିର ଉତ୍ସ ନିକଟରେ ଝାଡ଼ା ବସନ୍ତୁ ନାହିଁ କିମ୍ବା ଶୌଚ ହୁଅନ୍ତୁ ନାହିଁ ଏବଂ ସେଥିରେ ଝାଡ଼ା ରୋଗୀଙ୍କ ଲୁଗାପଟା ଧୁଅନ୍ତୁ ନାହିଁ ।

ହାଲୋଜେନ୍ ବଟିକା ବ୍ୟବହାର କରିବେ କିପରି ?

- ଏକ ଲିଟର (ପା'କିଆ ଗ୍ଲସରେ ୪ ଗ୍ଲସ) ପାଣିରେ କେବଳ ଗୋଟିଏ ହାଲୋଜେନ୍ ବଟିକା ପକାଇ ଅଧଘଣ୍ଟା ପରେ ପିଅନ୍ତୁ ।

ତରଳଝାଡ଼ା ହେଲେ କଣ କରିବେ ?

- ତରଳଝାଡ଼ା ହେଲା ମାତ୍ରେ ରୋଗୀକୁ ସଙ୍ଗେସଙ୍ଗେ ଚିନି – ଲୁଣ (ଏକ ଗ୍ଲସ୍ ପାଣିରେ ୨ ଚାମଚ ଚିନି ଓ ଚିମୁଟାଏ ଲୁଣ) ମିଶା ସର୍ବତ ପିଇବାକୁ ଦିଅନ୍ତୁ ଏବଂ ଘରେ ଥିବା ତୋରାଣୀ, କାଞ୍ଜିପାଣି ଓ ଘୋଳଦହି ପିଇବାକୁ ଦେବା ସହିତ ତୁରନ୍ତ ଡାକ୍ତରଖାନା ନେବାରେ ବ୍ୟବସ୍ଥା କରନ୍ତୁ ।

ମନେ ରଖନ୍ତୁ : ତରଳଝାଡ଼ା ହେଲା ମାତ୍ରେ ଅବହେଳା ନକରି ତୁରନ୍ତ ଆଶା ଦିଦି କିମ୍ବା ସାମ୍ବୁକର୍ମୀଙ୍କୁ ପରାମର୍ଶ କରନ୍ତୁ / ନିକଟସ୍ଥ ଡାକ୍ତରଖାନାରେ ଚିକିତ୍ସା କରାନ୍ତୁ ।



ସାମ୍ବୁ ଓ ପରିବାର କଲ୍ୟାଣ ବିଭାଗ

ଓଡ଼ିଶା ସରକାର