

# Standard Operating Procedures for Joint Action on Water Quality Monitoring and Health Outcomes

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## SOP for joint action on Water Quality Monitoring and Health Outcomes

### Background

Water is an essential natural resource for human survival. The availability of adequate and safe water is one of the key social determinants of health and the overall well-being of humans. Due to climate change-induced shifts in temperature, precipitation, rising sea levels, and overconsumption of groundwater, multiple challenges of quality, quantity, access, affordability, and continued supply and usage of safe water are being witnessed.

Water contamination and poor sanitation are directly linked to water-borne diseases like acute diarrhoea, Cholera, dysentery, Hepatitis A, and water-washed diseases such as scabies and other skin and eye diseases that are often reported as outbreaks. Sometimes water sources may have geogenic contaminants such as iron, fluoride, arsenic, nitrates, chlorides, phosphates, etc., which pose a major health risk to individuals and communities, leading to acute and chronic diseases. Water also hosts many human parasites, and incorrect water storage where supplies are inadequate, results in the breeding of vectors that spread diseases such as dengue etc.

To improve health outcomes, it is essential to be informed of water quality and coordinate action plans in times of distress. Further, water quality monitoring should inform the preparedness to prevent water-related illnesses and support in maintaining good public health. Taking this initiative forward, the Drinking Water Quality Monitoring and Surveillance Framework has been established under the Jal Jeevan Mission, Department of Drinking Water & Sanitation, Ministry of Jal Shakti (MoJS) with the vision to facilitate the provision of clean tap water supply to every rural home and public institution, ensuring testing and monitoring of drinking water supply and regular water quality surveillance by the community, to have confidence in consuming water directly from the tap. The framework establishes a tiered institutional framework for joint action on water supply and quality from state to village levels. (*Ref: Drinking Water Quality Monitoring & Surveillance Framework, Ministry of Jal Shakti, October 2021*). This standard operating procedure (SOP) document is developed to translate the vision into actions and establish convergence between the DDWS, MoJS, and the Ministry of Health & Family Welfare (MoHFW).

### Purpose

This SOP outlines joint actions, roles, and responsibilities at each level between functionaries of drinking water supply departments and health departments at the State/District/Village level, by engagement of the officials and staff mainly of Public Health Engineering Department (PHED)/ Rural Water Supply (RWS) department, and Health in the States/UTs for timely detection, prevention, management, and control of water-related diseases due to biological and chemical contaminants and their related health impacts through joint monitoring, preparedness, and timely response.

## Objectives

- To enable joint monitoring of water quality and water-borne disease surveillance for early response, control, and prevention of outbreaks
- To leverage the network of strategically located laboratories to support and validate water quality testing
- To enhance the capacity of key stakeholders on water quality monitoring, health impacts of abnormal water quality parameters, surveillance of water-borne diseases and coordinated actions
- To integrate routine awareness activities on water quality and its impact on health and enable community engagement
- To identify and address the existing and emerging health issues related to water quality

## Who can use the SOP

SOP has been prepared for use by the state, district, block, and panchayat level personnel associated with identified functionaries of both the Departments of Drinking Water and Sanitation (Jal Jeevan Mission (JJM), MoJS) and Health (MoHFW). The responsible cadres for various actions have been identified (in bold fonts).

## Institutional Framework

This section outlines the existing institutional framework at the national, state, district, and sub-district levels to be utilized for joint action on water quality monitoring and health outcomes. Further, the strengthening of institutional mechanisms is also suggested.

### A. National Level

Set up a water and health committee with representation from MoJS, MoHFW, and other ministries that meets once a quarter.

#### Roles include

- To support the formulation of policy, guidelines, and required time-to-time
- To provide necessary financial support to States and UTs through existing and or emerging mechanisms

### B. State Level

The State Water and Sanitation on Mission (SWSM) Executive Committee under MoJS should include representatives from the health department (SNO-NPCCHH and SSO-IDSP).

#### Roles include

- To develop policy, necessary directives, and guidelines related to water and health from time to time
- To collaborate with a research organization to promote research in water quality and health-related issues

- To establish water testing protocol for monitoring water quality during outbreaks of water-borne diseases, during mass gathering events, during and after extreme weather events/disasters, and with climate change (i.e., sea level rise)

### **C. District Level**

District Water and Sanitation Mission (DWSM) executive Committee under MoJS should include representatives from the health department (DNO-NPCCHH and DSO-IDSP, MS District hospital).

#### **Additional Roles include**

- To inform the water quality status in the district to District health team (DNO-NPCCHH, DSO-IDSP)
- To inform about water-borne and chemical contamination disease distribution in the district to District PHED/RWSD team
- To issue directives to block and community-level institutions
- To submit a copy of this information be shared with state and district health officials

### **D. Block Level**

The block health/medical officer from the health department and the equivalent nodal officer under PHED should coordinate with the equivalent nodal officer under PHED to effectively implement the activities envisaged under the SOP.

#### **Roles include**

- To coordinate monthly meetings and include representatives from the health department (Block Health/Medical Officer and Officer-in-charge CHC and PHC)
- Monthly review and update on water quality and health outcomes
- A copy of these review reports be shared with block and district health officials (DNO-NPCCHH and DNO-IDSP, and PHED)

### **E. Gram Panchayat and Village Level**

#### **a. Community-level healthcare workers**

At the village level, health functionaries work on matters related to water and health. In accordance with the Drinking Water Quality Monitoring and Surveillance Framework, five women frontline workers per village are to receive training on the usage of FTKs (Field Testing Kits), which may include anganwadis, SHG workers etc. The women receiving the training for Water Quality Surveillance, i.e., Jal Sakhini/Bahini, Jal Prerak, Jal Mitra, etc (women cadre under JJM), must also include healthcare functionaries to support joint action.

These include

- ASHAs, ASHA Facilitator
- CHOs (Community Health Officer)
- MPWs (multi-Purpose Workers)
- Anganwadis
- SHG (Self-help groups, NRLM)
- Teachers

### **Roles include**

- Support in field-level water testing
- Engage in creating awareness and providing information to the community on water quality, safe water practices, water-related health issues, existing water and health-related services, promotion of initiatives provided by PHED and health department such as taking individual tap connections and other water hygiene measures.
- Sensitize self-help groups and community on steps to be taken for the prevention of water borne diseases.
- Add Jal-charcha in the existing weekly/ monthly meetings.

### **b. Community platforms/committees**

For timely and coordinated action and dissemination of information on water quality and health concerns, following community platforms are also to be utilized.

- VISHWAS (a village-based initiative to synergize Health, Water and Sanitation)
- VHSNC (Village Health Sanitation Nutrition Committee)
- Jan Aarogya Samitis
- Village Water and Sanitation Committee (VWSC)
- Pani Samiti

PHED representatives and the trained members on water quality testing (as listed earlier) be integrated in aforesaid committees.

### **Proposed actions**

1. Integration of village level initiatives of water quality (PHED) and water-related health issues (NPCCHH).
2. Community-level local planning for convergent collective action on water and health-related services
3. Promote community participation for safe water and preventive health action, improving awareness of community on water and health issues and related services
4. Ensure training of their members in water quality related and water-related health issues

### **c. Community health/water days observance**

The trained members on water testing are also to participate in all the meetings of-

<b>Days</b>	<b>Discussion, health promotion, and action</b>
1. Village Health Sanitation Nutrition Day 2. World Water Day (March 22) 3. Jal Pakhwada	<ul style="list-style-type: none"><li>• Health issues related to water quality in the village</li><li>• Water quality-related issues in the village</li><li>• Suggest any measures to be undertaken regarding continued safe access to water</li></ul>
4. Jal Suraksha Diwas	<ul style="list-style-type: none"><li>• Water quality-related issues</li><li>• If any required measures are to be taken by health functionaries</li></ul>

## Joint Action Plan

<p><b>State level</b></p>	<p><b>A. Joint action by Water and Health Sectors together (State PHED/RWSD-State Water and Sanitation Mission + SNO- NPCCHH/SSO-IDSP)</b></p> <ul style="list-style-type: none"> <li>• Design joint IEC campaigns for water and water-related health issues by state health department (<b>SNO-NPCCHH and State PHED</b>)</li> <li>• Water-borne disease outbreak response: member of PHED to be part of the <b>State Rapid Response Team (RRT)-IDSP</b> (these officials will undertake testing of water sources and take subsequent corrective actions as required)</li> <li>• Conduct training of master trainers from districts. Training of trainers to include training content of water and water-related health issues (<b>SNO- NPCCHH, SSO-IDSP &amp; State PHED</b>)</li> <li>• Issue of advisories for awareness and preparedness before summer, during floods, other extreme weather events (drought, cyclone, and saltwater intrusion due to sea-level rise), and during water scarcity and quality issues. (<b>SNO- NPCCHH &amp; State PHED</b>)</li> </ul> <p><b>B. Water sector (State PHED)</b></p> <ul style="list-style-type: none"> <li>• Sharing of IEC material created by PHED with SNO-NPCCHH for circulation during NPCCHH’s IEC campaigns</li> <li>• Sharing of the IEC calendar of PHED with SNO-NPCCHH to allow simultaneous IEC campaigns</li> <li>• Sharing of PHED/RWSD training modules on water with SNO-NPCCHH and SSO-IDSP</li> <li>• Share chemical hotspot information with SNO-NPCCHH</li> <li>• PHED to share seasonal water-related cleaning and disinfection activity report along with a report of institutional arrangements made with SNO-NPCCHH</li> <li>• Alerts of inadequate water quality will be shared by PHED with SSO-IDSP for necessary action</li> <li>• Annual report on the status of water quality in the State must be prepared by PHED/ Chief Chemist and discussed.</li> </ul> <p><b>C. Health sector (SNO-NPCCHH/SSO-IDSP)</b></p> <ul style="list-style-type: none"> <li>• Design a network of public health laboratories that can perform water quality testing at the district and the block level and share with PHED (<b>SSO-IDSP &amp; SNO-NPCCHH</b>)</li> <li>• Sharing of IEC material created by <b>SNO-NPCCHH</b> with PHED for circulation in PHED’s IEC campaigns</li> <li>• Sharing of training modules on water-related health issues prepared under NPCCHH, IDSP, and NHSRC/SHSRC with PHED/RWSD (<b>SNO- NPCCHH</b>)</li> <li>• <b>SNO-NPCCHH</b> to share seasonal report of water-health preparedness under the health department along with</li> </ul>
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	<p>institutional arrangements made, with PHED</p> <ul style="list-style-type: none"> <li>Alerts of water-borne diseases will be shared by <b>SSO-IDSP</b> with the State PHED department to investigate water quality and take corrective measures.</li> </ul>
<p><b>District level</b></p>	<p><b>A. Joint action by Water and Health Sectors together (Nodal Officer, District Water and Sanitation Mission (DWSM)+ DNO-NPCCHH/DSO-IDSP)</b></p> <ul style="list-style-type: none"> <li>Observe WaSH-health days</li> <li>Conduct a regular district level (at least quarterly) with an agenda on water quality monitoring &amp; surveillance activities</li> <li>Water-borne disease outbreak response: member of PHED to be part of the District RRT-IDSP (these officials will undertake testing of water sources and take subsequent corrective actions as required)</li> <li>Issue advisories for awareness and preparedness before summer, during floods and other extreme weather events (drought, cyclone, and saltwater intrusion due to sea-level rise)</li> <li>Conduct training of master trainers. Training of trainers to include training content on water and water-related health issues</li> </ul> <p><b>B. Water sector (Nodal Officer, DSWM)</b></p> <ul style="list-style-type: none"> <li>Regular water quality testing of HCF and sharing results with the health team (DNO-NPCCHH, DSO-IDSP, MS-District hospital, OIC-CHC)</li> <li>Undertake visits to water-borne disease hotspots, regularly test water quality at both source and household levels, ensure availability of disinfectants, and undertake corrective measures when required</li> <li>Additional frequency of testing recommended during floods, droughts, cyclones and in coastal areas</li> <li>Ensure monitoring of treated water discharge from ETP/STP from HCF</li> <li>Alerts of inadequate water quality will be shared by PHED with DSO-IDSP for necessary action and DNO-NPCCHH for information</li> <li>Capacity building of IDSP-RRT in utilizing water quality testing for outbreak response</li> <li>Periodically test water from DH, PHC, CHC, and sub-centres and share report with the Medical Officer-In-Charge</li> <li>Increase awareness about provision of citizen corner under JJM Dashboard for testing and tracking of water quality</li> </ul> <p><b>C. Health sector (DNO-NPCCHH/DSO-IDSP)</b></p> <ul style="list-style-type: none"> <li>Random water access and water quality monitoring by DNO-NPCCHH and periodically submit reports to PHED</li> <li>Cross-verification of water quality testing with by Public Health laboratories (<b>DSO-IDSP &amp; DNO-NPCCHH</b>)</li> </ul>



	<ul style="list-style-type: none"> <li>• Ensure monitoring of treated water discharge from ETP/STP from HCF</li> <li>• Provide information on water-borne disease hotspots, surveillance reports and outbreak reports for water testing and response by PHED (<b>DSO-IDSP</b>)</li> <li>• To promote adequate and safe supply of potable water in healthcare facilities incentivized through the Kayakalp Award Scheme (<b>DNO-NPCCHH</b>)</li> <li>• Alerts of water-borne diseases will be shared by <b>DSO-IDSP</b> with District PHED department for investigation of water quality and taking corrective measures.</li> <li>• <b>Medical Officer In-Charge (MOIC) of PHC, CHC and Medical Superintendent (MS) District Hospital (DH)</b> in public health system should monitor water-borne disease trend reported in their facilities, ensure periodic testing of water quality in health facilities, take necessary preparedness and action based on water quality alerts.</li> </ul>
<p style="text-align: center;"><b>Block level</b></p>	<p><b>A. Joint action by Water and Health Sectors together (Nodal officer under Water and Sanitation Mission + Block Health/ Medical Officer)</b></p> <ul style="list-style-type: none"> <li>• Identification of water quality hotspots, water-related disease outbreaks and remedial action</li> <li>• Conduct a regular block level (at least quarterly) with an agenda on water quality monitoring &amp; surveillance activities</li> <li>• Community sensitization on water-borne diseases and preventive steps to be taken and to mitigate the water contamination.</li> <li>• Promote community participation for safe water and preventive health action, improving community awareness of water and health issues and related services.</li> </ul> <p><b>B. Water sector (Nodal officer under Water and Sanitation Mission)</b></p> <ul style="list-style-type: none"> <li>• Ensuring regular cleaning of water supply sources tanks/OHTs/ GLSR and collection of samples at sources and households for water quality testing</li> <li>• Conduct a survey to assess the risks of contamination of drinking water sources such as deep borewells, dug wells, shallow, gravity feed pipe supplies, and deep handpumps.</li> <li>• Ensure stock of essential consumables such as disinfectants, field testing kits etc.</li> <li>• Ensure water quality test reports are reported through the Management Information System (MIS).</li> </ul> <p><b>C. Health sector (Block Health/Medical Officer)</b></p> <ul style="list-style-type: none"> <li>• <b>Block Health/Medical Officer and Medical Officer in charge of PHC</b> to monitor and correlate water quality testing reports to health indicators of the population for preventive action.</li> <li>• <b>Identify</b> existing and emerging water quality hotspots related to biological and chemical contamination to prevent and control</li> </ul>

	adverse health outcomes.
<b>Community level</b> Gram Panchayat and/ Village and Sub Centre ANM/AS HA/PHC/ HWC	<p><b>A. Water sector (VWSC, Pani Samiti)</b></p> <ul style="list-style-type: none"> <li>Periodically test water from schools, AWC, PHC/HWC and share report with MOIC PHC/HWC (<b>Trained community workers</b>)</li> <li>Share records of Sanitary survey and water quality testing with MOIC PHC/HWC (<b>VWSC, Pani Samiti</b>). Display the results of testing in village.</li> <li>Community level health care workers (refer to page 3) for Water Quality Surveillance should be additionally trained on safe drinking water practices- water quality testing, monitoring, cleaning, and disinfection and provided with field-testing kits. (<b>Nodal officer under Water and Sanitation Mission</b>)</li> </ul> <p><b>B. Health sector (VISHWAS, VHSNC, JAS)</b></p> <ul style="list-style-type: none"> <li>Community-level healthcare workers and women identified for Water Quality Surveillance would be additionally trained on water related health issues and disinfection practices (<b>PHC Medical Officer</b>)</li> </ul>

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