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### **WASH CAMPAIGN IN KERALA- A HOLISTIC APPROACH FOR THE REDUCTION OF INFANT AND CHILD MORBIDITY**

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**Dr.M.K.P.Roy**

Executive Director, Centre for Community Health Research, Sadanathil bungalow, Vettikavala,  
Kottarakara, Kerala- 691 538, INDIA [E-mail:roycchr@satyam.net.in](mailto:roycchr@satyam.net.in)

#### **Abstract**

Diarrhoea claims the lives of 2 million children around the world every year while one million children in India die of diarrhoeal diseases each year directly as a result of drinking unsafe water and living in unhygienic conditions. The health profile of Kerala is said to be low mortality-high morbidity syndrome. Though the State is having a high literacy and wide health services, the diarrhoeal morbidity and mortality rate reported unacceptably high. It was observed that poor socio-economic status, lack of protected water supply and toilet facilities were the major risk factors of diarrhoeal diseases in Kerala. Centre for Community Health Research ( CCHR), Kerala conducted an in-depth investigation on the causes of drinking water contamination and its possible impact and implications on the health status of the people in Kerala. It was observed that all drinking water sources in the Kollam region (Kerala) including open dug wells, tube wells and all tap water sources found not safe for drinking and reported highly contaminated due to high percentage of fecal and total coliforms. Non-sanitary latrines, dumping of domestic wastes, lack of drainage facilities, proximity of dug wells and latrines, water logging environment, open defecation, lapses in drinking water disinfection and source protection were found to be the main causes of large scale contamination of drinking water sources. This leads to a high rate of water-borne and water-related diseases like diarrhoea , gastroenteritis, worm diseases, typhoid, cholera, polio and amoebic dysentery were recorded during the course of investigation. In this context, WSSCC- India Chapter and Centre for Community Health Research jointly launched a programme called “WASH Campaign’ as part of a global programme on water, sanitation and hygiene for all. The main objective of the programme is to reduce the present water-borne morbidity in the State of Kerala. The programme is multisectoral and participatory.

*Key words:* WASH Campaign, Kerala, Sanitation, Hygiene

#### **Introduction**

At the global level it was estimated that 1099 millions people lack access to safe water where as in India, 125 million people lack access to safe water. It was pointed out that globally, 2403 million people defecate in the open areas while in India, 700 million people lack access to

sanitation facilities and resort to defecate in the open. Diarrhoea claims the lives of 2 million children around the world every year while one million children in India die of diarrhoeal diseases each year directly as a result of drinking unsafe water and living in unhygienic conditions (WSSCC, 2000). Government of India has reported that water-borne diseases have serious health implications due to the prevalence of high morbidity and mortality. Further, young children bear maximum of disease burden. India loses every year about 400000 children under 5 years of age mainly due to diarrhoea ( Panda, 2003). Recently, a remarkable observation made by the Central Bureau of Health Intelligence, Government of India is that while the massive investments have been made by the Central and State Governments in India over the last 5 decades, morbidity and mortality due to water borne and water related diseases have not declined proportionately to the extent of increase in the availability of potable water supply. Further, the availability of potable water may not result significant fall in water borne diseases unless, the quality of drinking water at the consumer level is properly ensured and unless proper handling practices and personal hygiene and environmental sanitation is improved.

Several studies in Kerala indicated that poor drinking water quality found to be a major risk factor for the overall morbidity profile of the State. The health profile of Kerala is said to be low mortality-high morbidity syndrome. Studies have been observed that Kerala is the only place in the world having highest concentration of dug wells per sq. km. It was estimated that there are three million wells in Kerala. Most of the people in Kerala prefer to drink well water because of its good taste. Therefore, protection of dug wells should be of paramount importance in order to protect the health of people, particularly the rural mass. A study on the bacterial quality of water in selected wells in Kerala revealed that water in none of the open wells investigated was of drinking water quality standard as prescribed by Bureau of Indian standards and was not safe for drinking (SEU,1991). This was a startling observation that more than 50 percent of population in Kerala still in use of dug well water as the only source of water for drinking. The co-existence of the diseases of poverty with diseases of affluence is the picture characterising the morbidity profile of the State. The dominant disease group comprises diarrhoeal diseases, gastroenteritis, dysentery, cholera, infectious hepatitis, malaria, worm diseases, typhoid, polio, rotavirus infections, E-coli infections, Japanese encephalitis, dengue fever, conjunctivitis, weils disease and skin ulcers were identified as the common water-borne and water-related diseases in the area. In addition to this, emerging trends of HIV/AIDS positive cases have been a major threat to the health sector of Kerala.

Recently, Centre for Community Health Research ( CCHR), Kerala conducted an in-depth investigation on the causes of drinking water contamination and its possible implications on the health status of the people in Kerala. It was revealed that all drinking water sources in the areas including open dug wells, tube wells and all tap water sources found not safe for drinking and reported highly contaminated. Non-sanitary latrines, dumping of domestic wastes, lack of drainage facilities, proximity of dug wells and water sources, water logging environment, open defecation, lapses in drinking water disinfection and source protection were found the main causes of large scale contamination of drinking water sources. Further, it was observed a high level of water-borne diseases in the area. It was significantly noticed a lack of awareness in the mindset of the people on safe drinking water, sanitation and hygiene promotion. In this context, WSSCC- India Chapter and Centre for Community Health Research jointly launched a programme in mid 2002 called “WASH Campaign’ as part of a global programme on water, sanitation and hygiene for all.

## Present morbidity profile

Centre for Community Health Research (Kerala) carried out an epidemiological survey in Kollam (South Kerala) in order to find out the impact of drinking water quality on the health status of the people. It was observed that 33 percent of water borne diseases in the area were diarrhoea, 30 percent gastroenteritis, 16 percent ascariasis, 8 percent typhoid, 7 percent enterobiasis, 2 percent cholera, 2 percent polio and 1 percent amoebic dysentery (Fig.1). Water related diseases reported in Kollam municipal Corporation are presented in Fig.2. It was revealed that 36 percent of water related diseases were registered as conjunctivitis, 25 percent allergy, 24 percent malaria and 15 percent skin ulcers (Roy and Prakasam ,2003). The study revealed that poor drinking water quality in the study area predominately associated with high rate of water borne and water related diseases. Further noticed that both the water borne and water related diseases were significantly related to the socio-economic status of the people in the area. The occurrence of these diseases seemed to be correlated with their socio-economic status, the incidence being higher among lower socio-economic groups. This indicated the fact that poor are more vulnerable to all sorts of diseases associated with water and sanitation. Lack of accessibility and awareness on clean drinking water and sanitation among lower socio-economic groups of people create more complex problems in their health status.

[Fig. 1 and Fig. 2 to be included]

## Programme strategy

The programme is multi-sectoral and participatory at grass-root level. The main Stakeholders of WASH Programme are Local Self-Governments (PRIs), NGOs, CBOs, Self-help Groups, Neighbourhood Groups, Women's Groups, Anganwadis, Primary schools, PHCs, ICDS, WATSAN Committees, State and National Governments, International Organisations like WaterAid and Water Supply & Sanitation Collaborative Council (WSSCC). Intensive training will be provided to volunteers as well as representatives of stakeholder organisations. After training, materials for awareness campaign will be distribute to the trainees. These materials including WASH Posters will be exhibit in all respective institutions in rural as well as urban areas. Volunteers and representatives will explain the various components of WASH campaign.

WSSCC-India Chapter and WaterAid-India have jointly designed and produced 9 posters in English for the WASH Campaign in India. The main components of the posters comprises *Sanitation – ways within our means; Simple practices for a healthy life; The Facts and the Solutions; Timely Action Saves Lives; Hand Washing; Faecal – oral Transmission Route; Kitchen Gardens; Our Children are the future* and *Who is responsible?*.

## Programme components

- (a) *Sanitation – ways within our means*: This illustrates various aspects of a “clean village” and a “unclean village”. The clean village is depicted as the “heaven on the earth” whereas the unclean village as the “hell on the earth”. In an unclean village, there is illustration of open defecation, water stagnation, waste accumulation, various sources of drinking water contamination in wells, ponds and other drinking water sources. While in a clean village, there is Water and Sanitation Committee (WASAN)/ Village Development Committee (VDC) for making decisions and for empowering the local communities. Further to depicts on sanitary latrines, compost pit, wastewater for kitchen garden, good hand pumps/ sanitary wells etc.

(b) *Simple practices for a healthy life*: This poster illustrates various means of hygiene promotion for a healthy life. Depiction of key hygiene behaviours include water handling, personal hygiene, safe disposal of human faeces, food hygiene, safe disposal of animal and solid waste, safe disposal of liquid waste and village sanitation. In *water handling*, pictures to explain the importance of a safe water source for drinking water collection, keeping of water containers in home and the necessity of a ladle/tap/tilt to pour drinking water in order to avoid dipping hands in water. There are three pictures in *personal hygiene* to explain the benefit of hand washing. In *safe disposal of human faeces*, there are illustrations on sanitary latrine for defecation, disposal of child faeces and safe disposal of faeces if a latrine is yet to be built. Pictures on *food hygiene* depict keeping up of food in kitchen, cleaning of vegetables before cooking and how to cook pork meat etc. Illustrations on *safe disposal of animal and solid wastes* explained how to dispose animal waste away from a water source and a dwelling area, disposal of animal and other bio-degradable wastes in compost pit and safe disposal of non-degradable waste in the household environment. *Safe disposal of liquid waste* depicts how to raise a kitchen garden with wastewater from household, use of a soak pit to dispose wastewater and regular maintenance of drainage canal in order to ensure free flow of wastewater. There are three pictures to explain the various aspects of *village sanitation*, which include protection of water sources by avoiding open defecation and washing of animals near water sources. Promotion of Village Committees, maintenance of village sanitation and regular cleaning are some of the main components of this section.

(c) *The Facts and the Solutions*: In this section, there is a comparison of Global and Indian scenario on safe drinking water, sanitation, hygiene and health. It was noted that globally, 1099 million people lack access to safe drinking water whereas in India it was 125 million. In terms of open defecation, 2403 million people in the world as a whole resort to open defecation while in India 1 Fig. 4 lack access to sanitation facilities and defecate in the open. Diarrhoea claim 1 million children around the world every year but in India it was noted that 1 million children lose their lives to diarrhoea every year. Pictures to illustrate the solutions for the above said problems are safe drinking water, sanitary latrines and hand washing with soap.

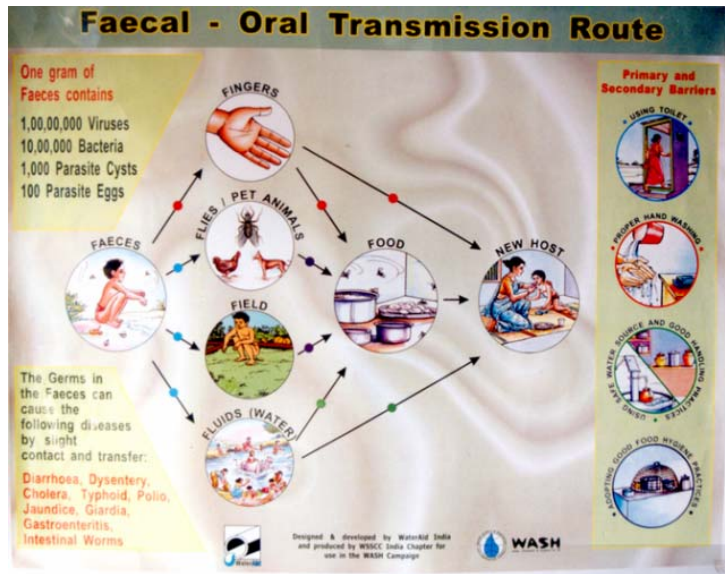
(d) *Timely Action Saves Lives – Treat Dehydration With ORS/SSS*: Various pictures of this poster to explain how to prepare ORS and Sugar Salt Solution (SSS). Some of the very important points mentioned during the preparation ORS/SSS that before preparing ORS/SSS, hands, utensils and spoons should be washed by using any cleaning agent. The vessels containing the ORS/SSS should be covered and do not use the prepared ORS solution for more than 24 hours and SSS for more than 8 hours. Directions are given to those affected with diarrhoea should have a diet supplemented with fruit juice, butter milk, black tea with lemon, tender coconut water, rice or dhal porridge. Further, lactating mothers should continue to breast feed children affected with diarrhoea.

(e) *Hand Washing –Washing away germs, preventing diseases*: Hands are the body’s feeders and cleaners and helping to eat and keep the bodies clean, including defecation. If hands do not wash at critical times, particularly after handling human faeces, fecal germs can be transmitted, leading to diarrhoeal diseases. There are pictures to depict what are the “critical times”



when hand washing should be practices. The pictures to explain the critical times mainly after disposing of child faeces, after defecation and anal cleaning, after washing children's bottoms, after agriculture work, after any cleaning activity, after children's play, before cooking serving food, before eating and before feeding children. Practicing hand washing can prevent diseases like diarrhoea, cholera, jaundice, typhoid, amoebiasis and skin diseases. Soap, ash, soap nut powder and soil can be used as cleaning agents for washing hands.

- (f) *Faecal – oral Transmission Route*: Depictions on faecal-oral transmission route are faeces, flies/pet animals, fields, fluids (water), fingers and food. Illustrations are given to block the faecal-oral transmission route include using of toilet, proper hand washing, using safe water source and good handling practices, and adopting good food hygiene practices. Diarrhoea, dysentery, cholera, typhoid, polio, jaundice, gastroenteritis and intestinal worms are common diseases cause due to slight contact and transfer of germs from faeces.



- (g) *Kitchen Gardens*: This session demonstrates uses of waste water from households and other sources for generating nutritious food. Pools of stagnant wastewater are the breeding grounds for mosquitoes that are the carries of many lives threatening diseases. Wastewater can be channeled to raise a kitchen garden where abundant nutritious vegetables and greens can be grown. Kitchen gardens can be raised near the sources of wastewater disposal. The ideal places include bathrooms, hand pumps, tap stands, sanitary wells etc. The benefits of kitchen gardens include the prevention of mosquito breeding, safe disposal of waste water, vegetables and greens add nutritious value to food by preventing malnutrition and promoting health, income can be generated from the sale of vegetables, vector-borne diseases like malaria and elephantiasis are prevented, and clean and green surroundings with better quality of life.
- (h) *Our Children are the future. Can we afford to exclude them*: This is a message to the society and all stakeholders of the sector that children are the future and it is the responsibility of all to prevent the death of 2 million children every year due to water-borne diseases. Further to recall that it is the duty and responsibility of every body to provide access to water and sanitation facilities in all schools and enabling children to learn and practice their proper use and management. We can make a difference through education and awareness on the practice of hygiene behaviours to children and through them, to the community. Further, by making children active partners in all water and sanitation programmes at schools.
- (i) *Who is responsible? - "We"* : Finally, the depiction on who is responsible for the pitiful situation on water, sanitation and health illustrates that nobody other than "we" are

responsible to manage, maintain and operate the system. Capacity building by providing proper training will create an ideal situation for the problems.

### **Programme outcome**

The environmental health interventions are regulatory in nature, and benefit accrued are indirect. They are exclusively preventive and benefits can be realised over a long period. The environmental health interventions also potentially convey considerable non-health socio-economic benefits. The WASH- Campaign is now at full swing. We have been receiving very good responses from all stakeholders. The final output of the programme will be assessed only at the end of 2004.

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