

## Prompt management averted an ongoing waterborne outbreak in the city beautiful, Chandigarh: An example to be followed

Sir,

The human health effects caused by waterborne transmission vary in severity from mild gastroenteritis to severe and sometimes fatal diarrhoea, dysentery, hepatitis and typhoid fever. Contaminated water can be the source of large outbreaks of diseases including cholera, dysentery etc., [1]. Chandigarh is getting untreated water supply from Kajauli water works. Following which water is treated daily for flocculation by aluminium chloride followed by sedimentation, filtration and treatment with chlorine dioxide to get chlorine concentration of 1.6 mg/l so that residual chlorine concentration of 0.2 mg/l is obtained as per guidelines. Subsequently, water is tested for the presence of chemicals, alkalinity, hardness, total dissolved solids, residual chlorine and coliforms by multiple tube test for enumerating most probable numbers. City beautiful Chandigarh faced water borne outbreak in the month of January 2017. Cases of gastroenteritis were detected from residents of Sector 18 who complained of stinking water supply. The symptoms were mild diarrhoea, abdominal cramps and fever [2]. The number of infected patients kept on increasing in following days and reached 500. Municipal Corporation (MC) in collaboration with Health Department came into rapid action. A team comprising 30 field workers, including an epidemiologist, conducted outbreak investigation in Sector 18. Door to door survey of around 625 houses was carried out. Awareness was spread among residents. A mobile van of the department was stationed at Sector 18C with two doctors and 15 health workers where patients were given instant treatment including oral rehydration salt (ORS), antibiotics and zinc tablets. The Health Department team also collected water samples from the houses, MC tube well located in Sector 18 and the waterworks of Sector 26 from where the water was supplied in the area [3]. The samples were sent to the civil dispensary, Manimajra for checking presence and enumeration of coliforms by multiple tube test which are indicators of faecal contamination. Also tests for the presence of chlorine and hydrogen sulphide were done to monitor water treatment and presence of organic matter. Director health services, Chief engineer and superintending engineer inspected the area [4]. Health department gave instructions about precautions to be taken by the people of Chandigarh to stay fit and healthy like drinking boiled water only even if it is a filtered, staying hydrated by drinking at least six 8-ounce glasses of fluids each day, choosing fruit juice without pulp or soda (without caffeine), tea with honey, eating clean and hygienic foods that usually are well tolerated during a diarrheal

illness (rice, cereal, bananas, potatoes, lactose-free products), washing hands before eating, intake of ORS in case of infection, avoiding self-medication [5].

Though chlorine levels were satisfactory, soon it was discovered that source was faecal contamination from water supply line behind Shiv Mishthan Bhandar at sector 18C. The pipelines were flushed and repaired. During repair notices were published in local newspapers about depleted water supply to avoid inconvenience.

As emphasised by Waterborne Disease Prevention Branch (WDPB) of Center of Disease Control (CDC) and prevention, the lead coordination and response unit for domestic and global water, sanitation, and hygiene (WASH) related diseases, the developing countries like India should have a vision and mission for availability of safe drinking water. With its many uses for drinking, recreation, sanitation, hygiene, and industry, water is our most precious global resource. Access to clean and safe water, adequate sanitation, and improved hygiene are critical to sustaining human health and life. This essential element for life can spread illness when it is contaminated by disease-causing organisms. CDC's WDPB was created in 2010 to be the lead coordination and response unit for preventing domestic and global WASH related disease with two objectives:

1. Vision-a world where everyone has access to safe water, adequate sanitation, and basic hygiene practices.
2. Mission-to maximize the health, productivity, and well-being of people around the globe through improved and sustained access to safe water for drinking, recreation, and other uses, adequate sanitation, and basic hygiene practices [6].

Every country should envisage these goals. Water supply system needs continuous monitoring to avoid outbreaks. Collaboration and prompt action of MC and Health Department had set an example of averting deleterious outcomes timely.

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