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Hepatitis-A in a residential school campus: An outbreak investigation, Karnataka, India 2019-20

Prashant Bhat^{1,2*}, Mohan Kumar R^{1,2}, Veenita Anand³, Ravikumar R⁴, Sudhirchandra Sooda¹, Premananda K¹, Jagadish HS^{1,5} and Prabhdeep Kaur²

¹Department of Health and Family Welfare, ICMR NIE Chennai, India

²ICMR-National Institute of Epidemiology, India

³Ludwig Maximilian University, Germany

⁴Ministry of Health and Family Welfare, India

⁵State Institute of Health and Family Welfare, India

Background: Hepatitis outbreaks are common in Indian schools. Between 2011 and 2013, India reported 44,663 Hepatitis-A cases, from 291 outbreaks, of which 73% were school-going children. A residential school in Karnataka reported 157 cases of jaundice on December 28, 2019. We investigated this outbreak to identify the source and propose recommendations.

Methods: In line with the Centre for Disease Control's outbreak investigation guidelines, after confirming the Hepatitis-A outbreak, we defined the case-patients as an inmate of the school campus with jaundice or dark urine and one associated symptom (Fever, Vomiting, Abdominal Pain, Itching, Malaise, Anorexia) from 01 August 2019 to 06 January 2020. We actively searched cases and conducted the descriptive analysis. We formulated a hypothesis and tested it with a case-control study. We inspected pipelines of water supplies. We also interacted with food handlers and the cafeteria.

Results: We identified 484 (11%) case-patients among 4335 students and staff. The first case was reported on 17 August. While the pattern was sporadic (n=56) initially, it started increasing in December and peaked on 20th December (n=26). Cases declined till 21 January 2020. Attack rates were higher among the 10-13 years age-group (15%), followed by the 14-16 (13%). Females had higher attack rates (15.3%). The median duration of illness was 17 (1-97) days, and hospitalisation was 11 (1-94) days. Nine hostels supplied by a single water source (Sump-A) had higher attack rates (5.5, 21.5%). The analytical study showed that consuming Sump-A water was associated with the outbreak (OR: 6.74, 95% CI: 2.90-15.62). The Sump-A had multiple open holes on inspection, the supply line had leakage points, and the water was not chlorinated. The garden surrounding sump-A was sprayed with untreated sewage.

Conclusion: Unprotected water of Sump-A led to the outbreak. Securing the Sump-A, chlorination of water and repairing the supply line were suggested as remedial measures.

Keywords: Hepatitis A, Outbreak investigation, viral hepatitis, Jaundice.

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Biography

Prashant Bhat is affiliated from District Vector Borne Disease Control Officer, Udipi and India EIS Officer (South) at ICMR NIE Chennai, India.

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