

# **An Outbreak of Acute Neurological Illness in Eluru, West Godavari District, Andhra Pradesh, India, 2020**

## **Authors**

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**Background:** In December 2020, over 600 residents of Eluru City were hospitalized with symptoms of seizures and sudden loss of consciousness (LOC) post flooding in the last week of November 2020. We investigated to describe the epidemiology of the outbreak and identify the risk factors for illness.

**Methods:** We conducted a descriptive study followed by a case-control study. For descriptive analysis, we defined a case as sudden onset of LOC or at least 1 episode of seizure in a person residing in West Godavari District, Andhra Pradesh, from December 1–15, 2020. Cases were searched house-to-house and by review of medical records at the district hospital. For case-control study, a case participant was defined as a person with a history of LOC or new-onset seizures from December 1–15, 2020, residing in Eluru and aged  $\geq 1$  year. Control participants did not have a history of LOC or seizure and were selected randomly from the same ward of the case. Biological and environmental samples were tested for possible contaminants.

**Results:** We identified 545 cases (55.8% males), including 1 death. The median age was 27 years (interquartile range: 17–37 years), and the majority 88% (480/545) resided in urban areas. Seizures were reported in 90% (491/545) cases. At the time of the interview 90% (310/345) had recovered. Cases were clustered in the wards supplied by municipal water reservoirs. The use of municipal water as the primary source of drinking in the household was associated with the acute onset seizure illness (aOR=4.6; 95% CI=1.6–13.0). High levels (average: 14.6 mg/L) of organochlorine compounds were detected in all 4 municipal water samples (acceptable limit: <0.001 mg/L).

**Conclusions:** This investigation highlights water ingestion as an acute exposure pathway for environmental contaminants (organochlorines) in the community after the largescale flooding. We recommended strengthening safe water surveillance in the natural disaster response contingency plans.