

Fact Sheet: typhoid outbreak in Pakistan

In November 2016, the clinical laboratory at Aga Khan University (AKU) Hospital reported the first outbreak of extensively drug-resistant (XDR) typhoid in Hyderabad, Pakistan. Latifabad and Qasimabad were the epicenter of Hyderabad's XDR typhoid outbreak at that time.

Typhoid has infected more than 15,000 people in this current outbreak, which is the first-ever reported outbreak of ceftriaxone-resistant typhoid. Not only is the strain resistant to ceftriaxone, the standard treatment in many parts of the world, but it is also resistant to all but one antibiotic for typhoid, making it increasingly challenging and costly to treat. More than 10,000 cases of confirmed typhoid have been identified as XDR.

Initial public health response (2017)

In January 2017, the Government of Pakistan initiated a public health response to the increasing number of XDR typhoid cases in Sindh province. The resulting activities included:

- Community and school awareness campaigns on safe hygiene and sanitation practices.
- Water purification and sanitation activities including distribution of chlorine tablets to affected communities in Hyderabad.
- Sensitization of general practitioners and clinicians in Hyderabad on the rational use of antibiotics for typhoid by the Department of Health and partners, with support from the WHO.
- A typhoid vaccination campaign was commenced on 5 August 2017 in Hyderabad with Vi-polysaccharide typhoid vaccine (ViPS). Approximately 6,000 children aged 6 months to 10 years were vaccinated.

A new vaccine: Typhoid Outbreak and Control Initiative (January 2018-March 2019)

- In January 2018, the Government of Pakistan, with support from local partners, initiated an emergency outbreak control intervention in response to the ceftriaxone-resistant typhoid outbreak in Hyderabad. Using health education and awareness campaigns and the new [World Health Organization-prequalified typhoid conjugate vaccine](#), TCV[®], almost 210,000 children aged six months to 10 years of age were vaccinated successfully. This vaccination campaign was the first of its kind in outbreak control response in Pakistan.
- Data from this campaign indicates that the outbreak control intervention proved highly successful. During the intervention the number of cases of typhoid decreased, demonstrating that the vaccine is effective in reducing the number of XDR typhoid cases.

Karachi (Feb 2018 to April 2019)

- By February 2018, XDR typhoid cases had been detected in Karachi in both government and AKU hospitals. The highest rates from Gulshan-e-Iqbal (AR=27.1/100,000), Saddar (16.6/100,000), North Nazimabad (AR 10.7/100,000), Malir (AR 10.1/100,000), Gulberg (AR 9.7/100,000) and Lyari (AR 10.1/100,000).
- As a response to the rapidly spreading XDR typhoid outbreak in Karachi, the Federal and provincial governments, along with partners, including AKU, launched a mass immunization campaign in April 2019. Since then, nearly 65,500 children have been vaccinated against typhoid in Lyari Town, Karachi, through hospital-, school- and mobile camp-based vaccination campaigns.

Additional outbreak response activities

- XDR National Taskforce was established in July 2018, and a joint WHO and United States Centers for Disease Control and Prevention (US CDC) mission was founded. Recommendations from these collaborations have been translated into a national action plan in Pakistan.
- Updated surveillance tools and a line listing template for data collection of typhoid cases were shared with all the provincial health departments on 7 September 2018. The purpose of this was to collect additional information and enhance surveillance, particularly about the occurrence and spread of XDR typhoid to other parts of Pakistan and to other countries.