

THE PATHCARE NEWS

CHOLERA OUTBREAK 2023: UPDATE & REMINDERS

Background

While uncommon and NOT endemic to South Africa, the world is currently (and since 1961) experiencing the 7th global cholera outbreak according to historic record with more than 50 countries having endemic cholera.

The current cholera outbreak in South Africa was signaled by the announcement of two laboratory confirmed cases on 5 February by the Gauteng province. The two cases returned from Malawi to Diepsloot, Johannesburg by bus on 30 January. As of 24 May, Gauteng province reported a total of 29 laboratory confirmed cases and 17 deaths, with nine cases reported in the Free State.

The disease cholera is a potentially life-threatening secretory diarrhoea caused by a curved Gram-negative bacillus, *Vibrio cholerae* with the O1 and O139 serogroups causing epidemic cholera. The natural reservoir for *V. cholerae* is brackish estuarine water. Conditions of poor sanitation and the lack of access to safe drinking water are central to epidemic outbreaks propagating through fecal-oral transmission in many parts of the world, as is currently occurring in South Africa.

Epidemiology

- Transmission - Fecal-oral
- Highly contagious - Poor sanitation & poor-quality drinking water
- Patients at greatest risk - In non-endemic areas (SA) all exposed age groups are at risk of severe disease
- Incubation period - 2 hrs – 5 days (2 – 3 days average) symptom onset can be VERY rapid with quick progression
- Infectious period - 7 – 14 days after convalescence but prolonged asymptomatic shedding / carriage does occur
- Outbreak prone - Highly

Clinical presentation

Symptom onset can be extremely rapid. Cases typically present with painless watery diarrhoea becoming clear with white mucus specs (rice-water appearance). In severe disease, diarrhoeal loss can exceed 1L per hour and death from dehydration can occur within hours. Fever is uncommon but can be a feature in children and vomiting may be present during the early stages. Large volume fluid secretion into the gut lumen causes abdominal pain and discomfort. Various other signs and symptoms of severe dehydration may be present, including lethargy, lactic acidosis, anuria and hypoglycaemia causing seizures and coma. A paradoxical decrease in diarrhoeal losses may occur as dehydration worsens, causing a false impression of improvement, just before circulatory collapse.



Laboratory diagnosis

Culture Cholera testing is not part of the routine culture testing of stool specimens but is performed on suspicious samples, e.g. rice-water stools and on clinician request. Specific culture media is used with follow-up procedures of suspicious bacterial colonies. Due to the inherent requirements of bacterial culture, negative results can only be reported in three to four days while positive results should be available in five to seven days. Antibiotic susceptibility for select antibiotics are also reported with a positive culture result.

Molecular / DNA testing The Biofire FilmArray Gastrointestinal (GI) Panel, a multi-plex PCR test targeting a set number of known gastrointestinal pathogens can also detect *V. cholerae* from stool. The turn-around time for this test is within hours of receipt of the specimen in a laboratory equipped for the test. This test result, however, does not report antibiotic susceptibility. Furthermore, there are certain restraints to its use as it is a costly test that is typically only reimbursed by medical aids if performed on specialist request for in-hospital patients.

Treatment & Prevention

Rehydration with intravenous fluids is the cornerstone of treatment. Mild cases can be managed with oral rehydration on an outpatient basis. Antibiotic treatment is not routinely recommended in all cases, but effective antibiotic therapy does reduce the volume and duration of diarrhoea and that could aid control measures. Macrolides and fluoroquinolones are suitable antibiotic options (Azithromycin 1g STAT or Ciprofloxacin 1g STAT). However, resistance does occur and therefore susceptibility results should be obtained where possible.

Strict adherence to contact precautions and hand hygiene by all people at risk (including health care workers) are essential. The provision of safe, clean drinking water and suitable sanitation is paramount. Health education of the community should focus on sanitary practices and water purification through boiling and treatment with household bleach if municipal sources cannot be trusted. Commercial and community food handlers need special education as contaminated food is a major source of transmission.

Please note: Cholera is a category 1 Notifiable Medical Condition. For any queries email NMCsurveillanceReport@nicd.ac.za or phone the 072 621 3805 hotline.

Further reading

- LaRocque, R & Harris, JB. Cholera: Clinical features, diagnosis, treatment and prevention. In: UpToDate, Post, TW (Ed), UpToDate, Waltham, MA, 2023.
- Mandell, Douglas and Bennett's Principles and Practice of Infectious Diseases, 9th Edition. Chapter 214 *Vibrio cholerae*
- National guidelines for cholera control. Guidelines for cholera control in South Africa. National Department of Health, South Africa. <https://www.nicd.ac.za/assets/files/2014%20SA%20Cholera%20Guidelines.pdf>
- Centers for Disease Control and Prevention. Cholera – *Vibrio cholerae* infection. <https://www.cdc.gov/cholera/general/index.html#:~:text=An%20estimated%201.3%20to%204,butt%20cholera%20can%20be%20severe>

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