

Yemen: Cholera Outbreak

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Overview

[Yemen is facing an unprecedented humanitarian crisis](#) due to an ongoing international conflict that began in March 2015 and has killed over 10,000 people. More than half of Yemen's estimated 25 million population lack access to basic health care, and roughly [15 million people](#) are without access to clean water, sanitation, and hygiene (WASH) services. Only [45% of health facilities in the country are functional](#), and many have limited access to medicines, medical equipment, and clean water and sanitation, further complicating efforts to control the outbreak.

Yemen is experiencing the world's largest ongoing cholera outbreak. The outbreak began in October 2016, tapered off in December, and surged in April 2017 ([Figure 1](#)). The World Health Organization (WHO) estimates that as of August 1, 2017, [over 440,000 Yemenis have contracted cholera](#), of whom over 1,900 have died. Children younger than 15 years old and the elderly are particularly vulnerable, together accounting for roughly 80% of all cholera deaths.

What Is Cholera?

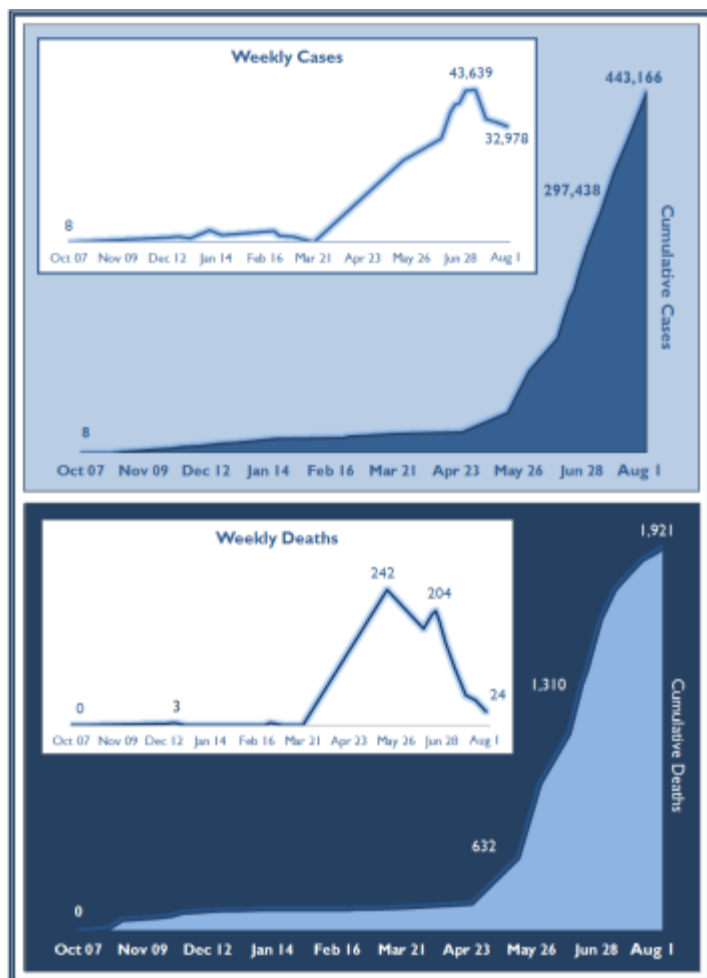
Cholera is a diarrheal infection that is contracted by ingesting food or water contaminated with the bacterium *Vibrio cholerae*. WHO estimates that up to 4 million global cholera cases occur annually, causing 21,000-143,000 deaths annually. The disease is primarily found in countries and areas with poor WASH conditions, such as urban slums, camps for internally displaced persons or refugees, and areas under conflict.

About 75% of people those infected with cholera do not exhibit any symptoms, although they can spread the bacterium for up to two weeks if others ingest food or water contaminated with their fecal matter. Cholera can cause acute diarrhea and vomiting, which can lead to severe dehydration and death within hours if not immediately treated. People with suppressed immune conditions, such as malnourished children and HIV-positive individuals, are more likely to die from cholera. Common treatments include oral rehydration salts and antibiotics. Cholera vaccines provide protection for up to five years. Long-term prevention of the disease requires the

establishment and maintenance of clean water systems, wastewater treatment plants, and sanitary facilities.

Figure 1. Estimated Suspected Cholera Cases and Deaths: Yemen

(October 7, 2016 - August 1, 2017)



Sources: Created by CRS from WHO webpage for [Situation Reports](#), accessed on August 2, 2017.

Note: The figures were calculated with data provided in WHO's *Epidemiology Bulletins* and reflect estimates at the time of each update.

The plan initially called for \$66.7 million to control the outbreak from May through October 2017. The cluster released a new cholera control plan in July following the continued spread of the disease. [The new plan](#) sought \$254 million to staunch the cholera outbreak. The July plan indicated that donors had contributed almost \$50 million.

Intense fighting (particularly near ports and major access points), [attacks on health facilities](#) and [humanitarian convoys](#), and [mistrust of the United Nations](#) have limited humanitarian access. Cholera control efforts are also complicated by the rapidly deteriorating health conditions. The disease can usually be treated with antibiotics and oral rehydration salts, but it is more deadly for people with compromised immune systems, such as those who are undernourished. About 3.3

The [conflict in Yemen](#) is primarily between a coalition of nations led by Saudi Arabia, which seeks to restore the powers of President Abdu Rabbu Mansour Hadi, who was overthrown in 2015 by an alliance composed of the Iran-supported Houthi movement and loyalists of the previous President, Ali Abdullah Saleh.

After more than two years of war, the country has fractured and the economy has been devastated. In 2016, President Hadi moved the Central Bank from Sana'a, the capital, to the city of Aden (reportedly to exert control over Yemen's finances). That action cut payments to thousands of civil servants in Houthi-Saleh-controlled territory, including for municipal services such as garbage collection. For the past nine months, waste has gone uncollected, polluting water supplies and contributing to the ongoing cholera outbreak. Government health workers have reportedly worked without pay for more than 10 months. [WHO and the United Nations Children's Fund](#) are reportedly paying allowances to supplement lost wages. [International human rights organizations](#) have accused warring factions of conducting airstrikes that have unlawfully targeted civilian infrastructure, such as water wells, bottling facilities, health facilities, and water treatment plants. By October 2016, [at least 274 health facilities had been reportedly damaged or destroyed](#) by the conflict and only 1,579 (45%) were fully functional and accessible. Due to inadequate access to health services and supplies, [deaths from treatable health conditions, such as childhood pneumonia, malaria, high blood pressure and diabetes, are reportedly rising.](#)

International and U.S. Response

In 2016, the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) issued a [\\$2.1 billion](#) appeal to fund the 2017 Yemen Humanitarian Response Plan (YHRP). More than \$1.5 billion would be used to provide nutrition (\$1.1 billion), health (\$332.1 million), and clean water and sanitation (\$127.7 million) to almost 20 million people. As of July 23, 2017, [the international community has provided nearly \\$900 million](#) for the plan. [In May 2017](#), the WASH Clusters in Yemen—composed of 180 partners from the United Nations, nongovernmental organizations, foreign nations, and the Yemen government—released [an integrated cholera response plan](#). The

million children and pregnant or lactating women in Yemen are acutely malnourished, including 462,000 children who are younger than five years old. Health experts are also concerned about the onset of the rainy season, which may increase the pace of cholera transmission.

In June 2017, the International Coordinating Group (ICG) on vaccine provision for cholera announced that it [was shipping 1 million doses of cholera vaccine to Yemen](#). The [vaccination campaign has been postponed](#) "at the [request of the health authorities](#), in favor of a much larger preventive campaign next year." Additional [efforts by U.S., U.N., and international partners](#) to provide health support and control the cholera outbreak have included

- the rehabilitation of the water supply system in Ta'iz City and surrounding districts, providing access to safe drinking water for more than 400,000 people;
- the provision of more than 400 tons of life-saving supplies, [including more than 820,000 bags of intravenous fluids](#) and nearly 160 cholera treatment kits;
- chlorinated water supplies that benefitted [over 5 million people](#);
- the [delivery of 30 ambulances](#); and
- the establishment of [over 1,000 diarrhea treatment centers](#) and oral rehydration corners and [3,000 cholera treatment beds](#).

Since the conflict began, [the United States has been the largest contributor of humanitarian aid to Yemen](#), having provided more than \$467.2 million in humanitarian aid in FY2017. Funds were provided to international aid organizations from USAID's Office of Foreign Disaster Assistance (OFDA), USAID's Food for Peace (FFP), and the U.S. Department of State's Bureau of Population, Refugees, and Migration (State/PRM).

CRS fellow Dr. Giorleny Altamirano contributed to this Insight.