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Global Efforts to Control Cholera

Background

Cholera is a severe diarrheal infection that is contracted by ingesting food or water contaminated with the bacterium *Vibrio cholerae*. The disease is found primarily in countries without sufficient access to clean water, sanitation, and hygiene. Cholera can also commonly be found in urban slums and camps for internally displaced persons or refugees. About 75% of infected people do not exhibit symptoms, although they can spread the bacterium for up to two weeks through food or water contaminated with their fecal matter. Others may experience acute diarrhea and vomiting—symptoms that could lead to severe dehydration or death within hours if not immediately treated. Common treatments include oral rehydration salts and antibiotics. Cholera vaccines provide protection for three to five years. The World Health Organization (WHO) estimates that each year there are between 1 and 4 million cholera cases worldwide, which cause between 21,000 and 143,000 deaths per year. People with suppressed immune conditions, such as malnourished children and people living with HIV, are more likely to die from cholera. Congress supports global cholera control efforts through appropriations for USAID, U.S. Centers for Disease Control and Prevention (CDC), and multilateral organizations like WHO.

Prevalence

Cholera cases are primarily found in sub-Sahara African and Southeast Asia (**Figure 1**). A number of countries across central and eastern Africa are contending with ongoing cholera outbreaks, and further outbreaks are expected as the El Niño weather pattern creates favorable conditions for the spread of the disease. Inadequate access to clean water and sanitation in parts of sub-Saharan Africa and Southeast Asia complicates efforts to eliminate cholera. With proper treatment, cholera case fatality ratios (CFR; percentage of people with cholera who die) generally do not exceed 1%. In 2015, 15 countries reported CFRs higher than 1%. These were Burma, Cameroon, Cote d'Ivoire, Democratic Republic of Congo, Ghana, Iran, Malawi, Niger, Nigeria, Somalia, South Sudan, Tanzania, Togo, Uganda, and Zimbabwe. Although Haiti has consistently reported the highest number of cholera cases and deaths in the Americas, concerted efforts by the Haitian government and implementing partners have led to a decline in cholera CFR from 2.2% in 2010 to 0.9% in 2015.

In 2010, United Nations (U.N.) peacekeepers inadvertently introduced cholera into Haiti and caused the largest cholera outbreak to date. In 2015, Haiti reported 36,045 cholera cases—the second highest number of global cholera cases (Afghanistan had the most with 58,064 cholera cases)—which accounted for 98% of cholera cases in the Americas and 21% of global cases (**Figure 2**). The U.N. Secretary-General is developing a package that would provide material assistance and support to those Haitians most directly affected by cholera. For more information on cholera in Haiti, see CRS In Focus IF10502, *Haiti: Cholera, the United Nations, and Hurricane Matthew*, by Maureen Taft-Morales and Tiaji Salaam-Blyther.

Industrialized countries virtually eliminated epidemic cholera in the late 19th and early 20th centuries, as municipal water treatment and sanitation networks were constructed and access to clean potable water was made readily available. In other parts of the world, the absence of such resources contributes to the persistence of cholera. WHO estimated that in 2015, 663 million people worldwide lacked access to clean water and 2.4 billion people were without proper sanitation facilities.

Cholera and International Health Regulations

Experts are uncertain about precisely how many cholera cases occur annually. Studies indicate that less than 10% of all global cholera cases are reported. Since the revised International Health Regulations (2005) entered into force in 2007, countries are no longer required to "automatically notify cases of cholera, plague, and yellow fever to WHO." The revised reporting requirement may also contribute to data gaps. Information on cholera cases is also challenged by varied case definitions, uneven political will, and insufficient surveillance and diagnostic capacity.

Cholera Vaccines

Prompted in part by the 2010 Haiti outbreak, the 64th World Health Assembly recommended the use of oral cholera vaccines (OCVs) in 2011 to help manage outbreaks. Two years later, an international cholera vaccine stockpile was established. WHO, Médicins Sans Frontières (MSF), the International Federation of Red Cross and Red Crescent Societies (IFRC), and the U.N. Children's Fund (UNICEF) jointly manage the stockpile. Countries can request OCVs during humanitarian crises, and vaccines are made available to areas where cholera is proven to be highly endemic. The OCV global stockpile is complemented by the work of the Global Task Force on Cholera Control (GTFCC), an international body comprising governmental and non-governmental organizations, which works to coordinate cholera control and treatment mechanisms throughout the world.

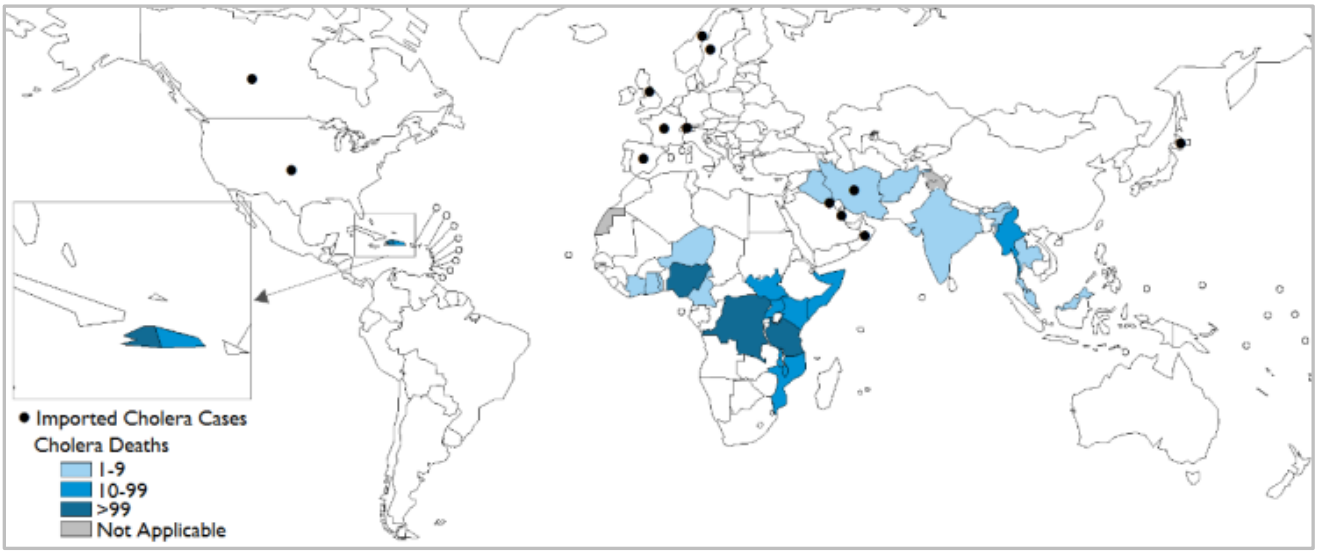
Outlook

Demand for oral cholera vaccines has exceeded the quantity available through the WHO OCV stockpile. In 2015, for example, WHO was unable to fill requests from Sudan and Haiti for cholera vaccines. In January 2016, WHO announced that it had approved a new manufacturer to produce the OCV vaccine, which is expected to triple the OCV stockpile to 6 million doses.

In an effort to prevent a cholera outbreak as severe as the 2010 outbreak in Haiti, WHO plans to test a new approach in Haiti that would involve the administration of a single vaccine dose. Standard guidelines call for OCV to be administered in two doses. Health experts hope that single dose administration of OCV is effective, as the strategy could double the amount of people who receive the vaccine. Cholera cases in Haiti have already risen in the aftermath of Hurricane Matthew: from October 2 through November 6, 2016, Haitian officials suspect that more than 5,840 people have contracted cholera. Hurricane damage to health facilities has hampered cholera control efforts.

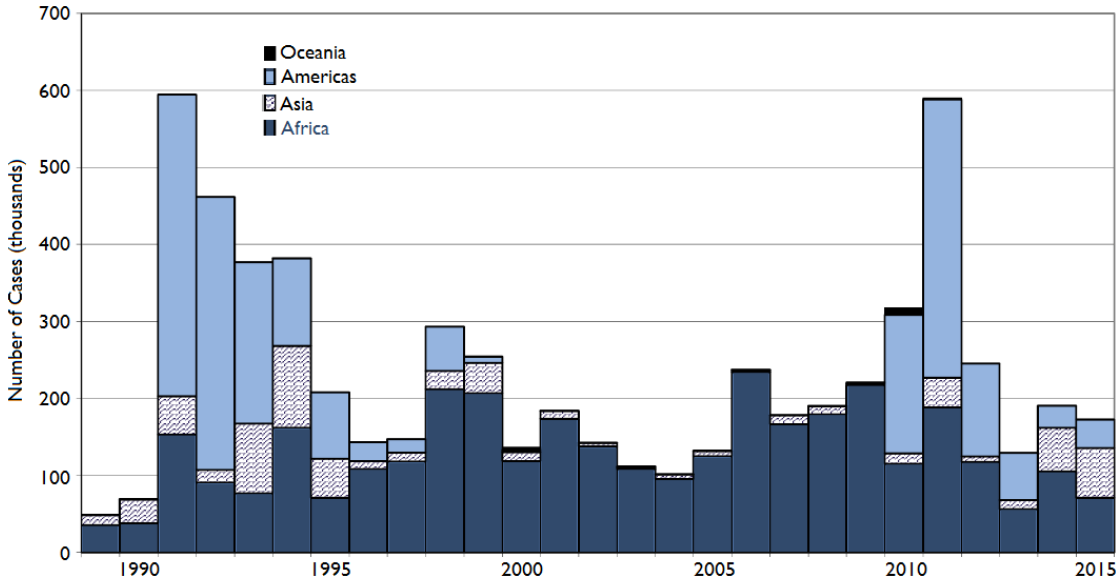
Elsewhere, cholera control and elimination efforts are undermined by conflict-induced displacement (increasing the likelihood that people find shelter in informal settlements lacking clean water and sanitation) and weak water and sanitation systems in several countries worldwide.

Figure 1. Cholera Deaths and Imported Cases Worldwide: 2015



Source: WHO, Global Health Observatory, Map Gallery, *Countries Reporting Cholera Deaths and Imported Cases in 2015*, September 26, 2016.

Figure 2. Number of Cholera Cases Reported to WHO: 1989-2015



Source: Adapted by CRS from WHO, *Weekly Epidemiological Record*, September 23, 2016, Volume 91, Issue 38, pp. 433-440, p. 437.

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