



Supportive Environments for Healthy Communities

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The World Health Organization (WHO) recently published its yearly update on worldwide estimates of the number of cholera cases and deaths. Of the 32 countries that reported deaths from cholera, 20 were on the African continent: these countries accounted for 3,397 deaths and 45 percent of the global total. In the Americas, Haiti reported 3,990 deaths, accounting for 53 percent of the global total. This issue also contains annotations and links to 2011 journal articles that analyze cholera outbreaks in Haiti, Zimbabwe, and Bangladesh and cholera training materials for community health workers.

WORLD HEALTH ORGANIZATION RESOURCES

- **Cholera in 2010**, IN: *Wkly Epidem Record*, 29 July 2011. ([Full-text](#))
Since 2000, the incidence of cholera has increased steadily, culminating in 317,534 reported cases worldwide, including 7,543 deaths in 2010, with a case-fatality rate of 2.38 percent. Overall, in 2010 the cumulative number of cases represented an increase of 43 percent compared to the number in 2009.
- **World Health Assembly Resolution - Cholera: Mechanism for Control and Prevention**, 2011. ([Full-text](#))
On May 24, 2011, the assembly adopted Resolution 64/15 on *Cholera: Mechanism for Control and Prevention*, calling attention to the key role of access to clean water and adequate sanitation in cholera prevention, and requesting the Director-General to revitalize the Global Task Force on Cholera Control.
- **Cholera Country Profiles**. ([Full-text](#))
Cholera profiles of more than 25 countries. Each profile contains cholera statistics, a description of WHO's cholera efforts in the country and other information.
- **Cholera Data and Statistics**. ([Link](#))
This section of the WHO website has charts on the number of cholera cases and deaths, by country, for the years 2000-2009.

2011 JOURNAL ARTICLES

- **Cholera Epidemic in Guinea-Bissau (2008): The Importance of "Place,"** IN:

PLoS One, May 2011. F. Luquero, Epicentre. ([Full-text](#))

This article describes the cholera epidemic affecting Guinea-Bissau in 2008, focusing on the geographical spread in order to guide prevention and control activities. The analysis allowed for the identification of the most affected regions in Guinea-Bissau during the 2008 cholera outbreak, and the most affected areas within the capital. This information was essential for making decisions on where to reinforce treatment and to guide control and prevention activities.

- **Cholera in the 21st Century**, IN: *Curr Opin Infect Dis*, July 2011. R. Charles, Massachusetts General Hospital. ([Abstract](#))

Provision of safe water and improved sanitation continue to be the mainstays of cholera transmission prevention; however, the role of cholera vaccination as a control measure in both endemic and epidemic settings is evolving. Recent advances in the understanding of long-lived protective immunity after natural infection may aid in the global efforts to control cholera.

- **Estimating the Reproductive Numbers for the 2008-2009 Cholera Outbreaks in Zimbabwe**, IN: *Proc Natl Acad*, May 2011. Z. Mukandavire, University of Florida. ([Full-text](#))

Beginning in August 2008, a major cholera epidemic occurred in Zimbabwe, with 98,585 reported cases and 4,287 deaths. The model in this study suggests that the underlying patterns of cholera transmission varied widely from province to province, with a corresponding variation in the amenability of outbreaks in different provinces to control measures such as immunization.

- **Implications of the Introduction of Cholera to Haiti**, IN: *Emerg Infect Dis*, July 2011. S. Dowell, Centers for Disease Control and Prevention. ([Full-text](#))

With more than 250,000 cases and 4,000 deaths in the first six months, the cholera epidemic in Haiti has been one of the most explosive and deadly in recent history. It is also one of the best documented, with detailed surveillance information available from the beginning of the epidemic, which allowed its spread to all parts of the country to be traced.

- **Modelling Cholera Epidemics: The Role of Waterways, Human Mobility and Sanitation**, IN: *J R Soc Interface*, July 2011. L. Mari, Ecole Polytechnique Fédérale de Lausanne. ([Abstract](#))

This study investigates the role of human mobility as a driver for long-range spreading of cholera infections. It states that long-range human movement is fundamental in quantifying otherwise unexplained inter-catchment transport of *V. cholerae*, thus playing a key role in the formation of regional patterns of cholera epidemics. It also shows how heterogeneously distributed drinking water supplies and sanitation conditions may affect large-scale cholera transmission, and analyzes the effects of

different sanitation policies.

- **Vaccination Strategies for Epidemic Cholera in Haiti with Implications for the Developing World**, IN: *Proc Natl Acad Sci, April 2011*. D. Chao, Center for Statistics and Quantitative Infectious Diseases. ([Full-text](#))

This study used a mathematical cholera transmission model to assess different vaccination strategies. With limited vaccine quantities, concentrating vaccine in high-risk areas is always most efficient. It showed that targeting one million doses of vaccine to areas with high exposure to *Vibrio cholerae*, enough for two doses for 5 percent of the population, would reduce the number of cases by 11 percent. The same strategy with enough vaccine for 30 percent of the population with modest hygienic improvement could reduce cases by 55 percent.

- **Warming Oceans, Phytoplankton, and River Discharge: Implications for Cholera Outbreaks**, IN: *Am Jnl Trop Med Hyg, August 2011*. A. Jutla, Tufts University. ([Full-text](#))

Phytoplankton abundance is inversely related to sea surface temperature (SST). However, a positive relationship is observed between SST and phytoplankton abundance in coastal waters of Bay of Bengal. This has led to an assertion that in a warming climate, rise in SST may increase phytoplankton blooms and, therefore, cholera outbreaks.

BLOG POSTS/REPORTS

- **John Snow and Innovation: How Innovation is Created through Group Intelligence**, posted on WASHplus Innovation Blog, August 10, 2011. ([Link to post](#))

Innovation is often made possible by the evolution of networked possibilities. In a presentation at Google Innovation Nation in Washington, D.C. on Thursday, Steven Johnson used the example of John Snow and cholera outbreaks in London during the mid-19th century.

- **Community Health Worker Training Materials for Cholera Prevention and Control**, 2010. Centers for Disease Control and Prevention. ([Full-text](#))

This manual is intended as a tool for community health workers to use to help their communities prevent cholera illnesses and deaths. The manual consists of 14 modules with information about community mobilization, cholera, oral rehydration solution, safe drinking water preparation and storage, hand washing, sanitation, food preparation, handling a death that occurs at home, and stigma associated with cholera.

- **A Conceptual Design of a New Paradigm for the Elimination of Cholera: Case study for the Democratic Republic of Congo**, 2011. Global Alliance Against Cholera. ([Full-text](#))

This new strategy to eliminate cholera in the Democratic Republic of Congo, and other

affected countries, includes but goes far beyond the traditional emergency medical response to cholera epidemics. This proposed new paradigm will effectively eliminate cholera and other waterborne contagious diseases by analyzing, securing, and reinforcing access to potable water, health education, and effective sanitation services for at-risk populations.

- **Haiti Cholera Training Manual: A Full Course for Healthcare Providers**, 2011. Ministry of Health and Population; CDC. ([Full-text](#))

The purpose of this training manual is to serve as a quick reference for the treatment and management of acute watery diarrhea in response to the recent cholera outbreak in Haiti. It is not meant to be exhaustive. It relies heavily on information from pre-existing documents, in particular, Guidelines for Operating Makeshift Treatment Centers in Cholera Epidemics and others.

Each *WASHplus Weekly* will highlight topics such as Urban WASH, Indoor Air Quality, Innovation, Household Water Treatment and Storage, Handwashing, Integration and more. If you would like to feature your organization's materials in upcoming issues, please send them to Dan Campbell, WASHplus knowledge resources specialist, at dacampbell@fhi360.org.



About WASHplus - WASHplus, a five-year project funded through USAID's Bureau for Global Health, creates supportive environments for healthy households and communities by delivering high-impact interventions in water, sanitation, hygiene (WASH) and indoor air quality (IAQ). WASHplus uses proven, at-scale interventions to reduce diarrheal diseases and acute respiratory infections, the two top killers of children under five years of age globally. For information, visit www.washplus.org or contact: washplus@aed.org.

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