

Cholera in Zimbabwe

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Cholera in Zimbabwe remains uncontrolled, with cholera-associated deaths continuing to be reported in 9 of the nation's 10 provinces.¹ In the 4 months since the outbreak began in August 2008, more than 35,000 suspected cases have been reported, including 1753 deaths. All provinces are affected but Harare sees almost one third of cases. It is possible that the cumulative numbers could double over the next few months, especially as January to March is a rainy season. The case fatality rate is a remarkably high 3% to 10%, reflecting the difficult circumstances faced by local healthcare providers and the increasingly involved external agencies.

A state of emergency was declared in the first week of December 2008 by the Health Minister, at which time an appeal for international help was made. For cholera in Zimbabwe this is an exceptional period, as the endemic situation has seen annual epidemics for over a decade. The current spread with such extraordinary numbers is well tracked, with an onset around 20 August 2008 in Chitungwiza City near Harare.²

In disadvantaged settings *Vibrio cholera* is predominately transmitted by contaminated water, whereas in developed regions it is via food contaminated by cholera-carrying water, shellfish being a significant reservoir. Endemic regions see excess numbers during wet seasons, particularly when floods occur.

The most common clinical presentation is severe diarrhoea, but most infections are asymptomatic or have only mild diarrhoea.³ The latter circumstance is advantageous to the organism, in terms of sustainability in a population in which potable water supply, hygiene and sanitation are suboptimal. Prolonged human carriage of *V. cholerae* in individuals is rare and unimportant to disease transmission.

The incubation period maybe less than a day and up to 5 days, and is linked to the bacterial inoculum. The onset is classically abrupt with voluminous (classically rice water) stools, often with a fish-like odour. Vomitus is generally clear and watery. Fluid loss from diarrhoea can be up to 1 litre per hour, causing life threatening dehydration and

electrolyte and acid/base disturbance that potentially appear within hours. Significant obstetric complications include miscarriage and premature labour.⁴

Treatment alters the natural history of severe cholera, for which case fatality can be as high as 50%. Currently the Zimbabwe Ministry of Health and Child Welfare (MoHCW) is receiving assistance from groups including WHO, Medcin sans Frontieres (MSF), UNICEF, Oxfam, the Centres for Disease Control and Prevention (CDC, USA), Plan International and the Red Cross.

Managing individuals with cholera is simple, and focuses on replacing fluids and electrolytes at the same rate as their loss occurs. This is after an initial period of "catch up". Indeed, cholera deaths should be completely preventable and any such event highlights the difficulties of implementing a sustainable and widely accessible treatment system.

Fluid and electrolyte restoration and maintenance may require intravenous therapy if severe, but usually oral rehydration solution (ORS) is adequate. The cholera cot is a useful adjunct to treatment of patients with severe diarrhoea. It has a hole to facilitate defaecation and also measurements of losses.

Antibiotics are recommended in severe disease, and can both shorten the illness duration, and lessen the diarrhoea and thus the need for possibly scarce health resources including hospital care and ORS. Resistance to many antibiotics via a number of mechanisms has been documented.⁵ Doxycycline for 1 to 3 days is regarded as first line, but resistance is well recognised. Co-trimoxazole, ciprofloxacin, chloramphenicol and erythromycin are also potentially useful.

The regular daily Zimbabwe cholera updates often report in excess of 100 deaths in 1 day.^{6,7} This recent toll illustrates the tremendous ongoing challenge in establishing treatment systems while attempting to curtail transmission.

Worldwide, cholera outbreaks have been well documented over the last 2 centuries even before microbiological capabilities developed. The epidemiologic investigation by John Snow in 1854 in London, which culminated in

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removal of the handle of the Broad Street pump perhaps carries the greatest notoriety. Pandemics of different serotypes of *V. cholerae* have been well documented. The current pandemic caused by El Tor, or serotype 01, was first identified in Indonesia in 1905. However, its spread was not observed until after 1960, initially to India, Africa, Southern Europe then South America in 1991.⁸ It is, however, the failure of public health systems, often due to civil conflict, which results in a local surge of cases and mortality above its baseline endemic rate. In Monrovia, Liberia, June 2003 saw the cholera case numbers increase around 8-fold due to fighting and population movement. June to September 2003 saw 1.4% of the population meet the case definition for cholera.⁹

Outside of publicly declared national emergencies, the incidence of cholera is difficult to reliably quantify in most affected countries. In 2005, 131,934 cases and 2272 deaths were notified worldwide. It is estimated that this may represent only 5% to 10% of the actual figures. Included in that reporting year were just 516 Zimbabweans, 26 of whom died.¹⁰

Outbreaks of classic infectious diseases, such as cholera, are somewhat inevitable in the circumstances currently presented by Zimbabwe. The well described and devastating political turbulence and economic collapse witnessed over the last decade has produced a loss of infrastructure necessary to facilitate domestic food production and maintain essential services including water, sanitation and hygiene.¹¹

The primary objectives of the WHO response to control the cholera outbreak in Zimbabwe are to reduce the spread of the epidemic by strengthening epidemiological and laboratory surveillance, ensuring access to safe water and sanitation together with sound infection control practices in healthcare facilities. By assisting in the early detection of cases and facilitating easy treatment access and appropriate case management, mortality should fall.

The WHO including its Global Outbreak and Alert Response Network (GOARN) and its partner organisations have deployed epidemiologists, logisticians, public health experts, infection control specialists, communications and social mobilisation experts, and also procured diarrhoeal disease and emergency health kits and medical supplies for the affected areas across Zimbabwe. More than half of the now 172 cholera treatment centres (CTCs) are receiving assistance from external non-government organisations (NGOs). The average population served by a CTC is 211,000 with a peak of 670,000 people served per CTU in Harare.¹²

The cholera outbreak in Zimbabwe is massive, the victims are now measured in the tens of thousands and the response required is complex. Moreover in this same country, people

aged 15 to 54 have an HIV prevalence of 18%. While many questions about the significance of co-infection remain unanswered, one can only reflect on how the people can cope with the social and health circumstances now confronting them continuously. At times of crisis such as this, it must be very difficult for the people of Zimbabwe to imagine any light at the end of this long tunnel.

Acknowledgement

The author would like to acknowledge the team from the World Health Organisation's Global Outbreak and Alert Response Network (GOARN) for providing up to date information on the situation in Southern Africa. The National University of Singapore is a GOARN partner.

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As predicted in this article there has been a large increase in the number of cases through January with WHO now reporting the outbreak to measure over 60,000 cases and 3100 deaths. Available at: <http://www.who.int/en/>.

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