

1. Keynote Speech: Facts on Cholera

WHO: Claire Lise Chaignat

Introduction:

Although well known since the nineteenth century, cholera remains one of the most feared and deadly epidemic diarrhoeal disease worldwide. Cholera, a waterborne disease, disappeared from Europe when sanitary living conditions became the norm, but its prevention and control is still extremely challenging in areas of the developing world where basic environmental health is not ensured. Furthermore, cholera always appears in the list of ten top health priorities in emergency settings and displacement situations.

In her presentation, Dr Claire-Lise Chaignat, medical officer in charge of the Global Task Force on Cholera Control of the World Health Organization (WHO) briefly reminded the basic facts about cholera (characteristics of the disease, its epidemiology, transmission and symptomatology) and gave an overview of current strategies designed to contain it (prevention, preparedness and control). New tools such as oral cholera vaccines (OCV) and rapid diagnostic tests (RDT) were also discussed.

Basic facts about cholera:

Cholera is a waterborne disease caused by the bacteria *Vibrio cholerae*, serogroups O1 or O139, that infects human beings by direct or indirect faecal-oral contamination. The serogroup O139 is only found in Asia for the moment. Other strains of *V. cholerae* exist, but they do not have the virulence to cause epidemics.

Cholera is an acute enteric infection characterized by an acute watery diarrhoea, with or without vomiting, that can cause death by massive dehydration within a few hours. If left untreated, the case fatality rate (CFR) may reach 50%. With prompt and proper treatment, it should be kept below 1%. First-line treatment consists of rehydration through the administration of oral rehydration salts (ORS), sufficient to cure up to 80% of sick people, and, for severe cases, the administration of intravenous rehydration fluids. Antibiotics are not paramount to treatment, but help reduce fluid loss, the duration of illness and of carriage. Recent studies show that co-administration of zinc in children also enhances treatment.

Epidemiology

Cholera is, until June 2007, one of the three diseases which notification to WHO is compulsory to all countries signatories of the International health regulations (IHR). However, due to insufficient surveillance systems, but also due to fears of stigmatization and travel and trade sanctions, cases are largely under-reported and the exact burden of disease is unknown. It is nonetheless estimated that cholera causes about 120,000 deaths per year, mainly in Africa and in South Asia. A map of cholera "hotspots" clearly indicates that the disease occurs often in areas already stricken by complex emergencies. Better surveillance is needed, not only to assess the true burden of disease, but also to analyze trends and patterns over time and to ensure an early warning system at the very beginning of outbreaks. Countries refusing to declare their cases should also realize that transparency towards the international community is not a hindrance, but on the contrary greatly helps to respond correctly to an outbreak. The cases of South Africa and Somalia are good illustrations of this.

Risk factors are multi-fold and comprise insufficient clean water resources, unsafe sanitation, overcrowding, climatic conditions, cultural behaviours, political context, etc. Cholera affects mainly poor and marginalized populations often living in urban slums or displaced in camps. The main characteristics of cholera are:

- Explosive outbreaks with high mortality
- Treatment simple, but preparedness needed
- Prevention possible but not easy

Effective control measures

Cholera can only be controlled through the implementation of inter-linked activities of prevention, preparedness and control. Prevention consists mainly of improving access to safe water, sanitation and hygiene, enhancing food safety and providing comprehensive health education to communities in order to impact on unhealthy behaviours. Preparedness to outbreaks is an essential activity and should be based on a good knowledge of epidemiological trends, seasonal recurrences and regional particularities. It should include plans of action and sharing of responsibilities if an outbreak occurs, as well as trainings and prepositioning of stocks. Good preparedness does not prevent cholera per se, but, if an outbreak occurs, aims to respond in a timely manner, contain the disease and mitigate its effects on the population. These measures, very clear in principle, are not easy to implement. Therefore, new approaches are needed to develop ways to better fight cholera.

New tools

Two tools were presented. The first one is the RDT for cholera, that enables a diagnostic at the patient's bedside in only a few minutes. It will greatly help surveillance and early warning. The commercial test - on the market at about US\$ 1.6 - needs now to be field-validated by WHO.

The second one is the pre-emptive use of OCV, an additional public health tool that can be used to complement other prevention activities. WHO participated in several campaigns and was able to issue in 2006 recommendations on the use of OCV in complex emergencies. Experience showed that the vaccine currently available is not ideal for emergency public health activities, but should be considered when its use can make a difference for the population as part of a comprehensive cholera prevention and control programme.

Key messages:

- Implement coordination and multidisciplinary approach
- Link health and environmental management
- Interplay prevention, preparedness and response
- Use OCV when they can make a difference
- Improve surveillance to guide interventions
- Adopt an open and transparent information policy