

Cholera Prevention and Control

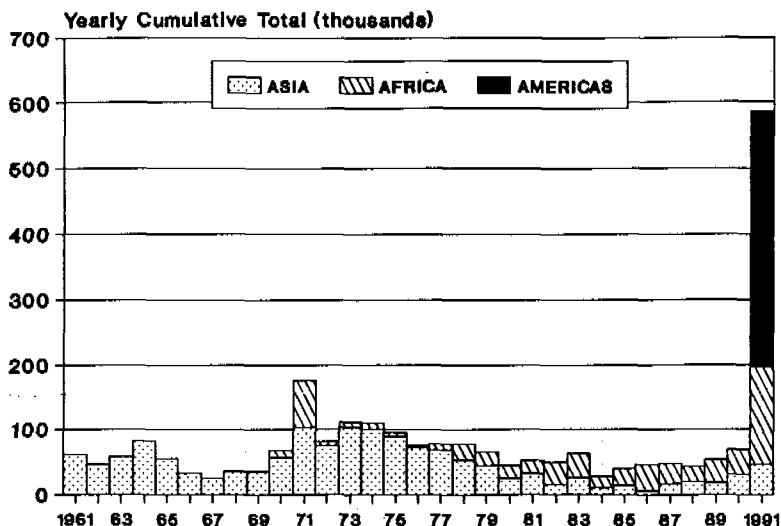
Assessing the Options in Water, Sanitation, and Hygiene Education

In 1991, cholera leapt onto the stage in Latin America after an absence of almost 100 years, causing 3,778 deaths. This epidemic in Latin America is part of a worldwide pandemic that began in Asia in 1961, spread to Africa in 1970, and is still going strong.

What can countries do to cope with this menace? In Peru, where the epidemic began, cholera hit without warning. But other countries in the region have been forewarned and can now be prepared. In Asia and Africa, the publicity about cholera's arrival in the Western Hemisphere has made officials more willing to talk about the disease and may help to focus attention on cholera prevention and control.

Cholera preparedness consists of making plans for how to treat those who fall ill and how to prevent or control the spread of the disease. **This Fact Sheet describes a step-by-step preparedness program to help countries make the best use of their resources in fighting cholera.** It covers control and prevention only, not treatment, and it concentrates on water, sanitation, and hygiene education activities. A.I.D.'s Office of Health, through the Water and Sanitation for Health (WASH) Project, can provide technical assistance with this program.

Cholera: The Global Situation Cases Reported to WHO 1961-1991



Background

Cholera is an acute enteric bacterial infection characterized by severe watery diarrhea, vomiting, and consequent dehydration. Death can occur in a matter of a few hours, if no treatment is provided. Infected persons may show no symptoms or only mild ones, but they can still spread the disease to others.

The route of transmission for cholera is simple: the

disease is acquired by the ingestion of an infectious dose of cholera vibrios, usually from water contaminated with the feces of an infected person. Cholera is considered the classic waterborne disease, but transmission through foods prepared with contaminated water or handled in an unsanitary manner is also common. Raw or undercooked seafood

caught in contaminated coastal waters can also transmit the disease. This strain of cholera can flourish in a saline environment.

The best way to slow the spread of cholera—and other more common diarrheal diseases—is to construct a barrier to keep the infectious organism from entering the environment. In practical terms that means disposing of all feces in a sanitary manner—through latrines, waterborne sewage systems, or other appropriate sanitation systems. For this barrier to be effective, 100 percent adherence is required. Even a minor breakdown can have wide ramifications because of the way cholera bacteria multiply and persist in the environment. For example, latrines must be

appropriately designed, well maintained, and used by entire families and communities to provide an effective barrier. If cholera cannot be kept out of the environment, then the bacteria must be avoided or destroyed through water system disinfection. For example, if the municipal water supply becomes contaminated, then people should avoid the bacteria by drinking bottled water. If avoidance is not possible, then the cholera bacteria can be destroyed through home disinfection of drinking water.

What specific measures can governments and communities take to erect these cholera barriers? As seen below, cholera prevention can involve a number of inter-related measures with varying payoffs.

Prevention and Control Options: A Framework for Thinking about Cholera

The planning process described in this fact sheet is based on a broad understanding of cholera prevention and control options. The preventive measures that governments can take may be seen as direct or indirect.

Direct measures lessen a country's vulnerability to cholera.

Provide Safe Water. The prime measure is to ensure **drinking water quality**, because contaminated water is the single most important route for cholera transmission.

Provide Enough Water. Assuring quantity of water is almost as important as assuring quality. If people are short of water, they will resort to unsafe supplies. Water must be available for personal and domestic hygiene as well as for drinking and cooking.

Provide for Safe Excreta Disposal. The most common cause of water contamination is poor sanitation. Thus, sanitary collection and **disposal of excreta**, both in the home and in cholera treatment centers, is a necessity. If excreta disposal is through

waterborne sewage, the **wastewater must be treated** before it is used for irrigation or discharged into receiving waters that people come into contact with or obtain fish from.

Dispose of Garbage and Trash Safely. Because **solid wastes** are often heavily contaminated with fecal matter (mainly disposable diapers and used toilet paper), they must be collected and disposed of safely.

Encourage and Enforce Hygienic Practices. Even if all the above actions are taken, cholera can still present a threat unless **safe personal, family, and community hygiene practices** are followed. These include food hygiene—especially regulation of street vendors.

“Indirect” or “influencing” measures at first glance do not appear to relate to cholera control. But the success or failure of cholera programs may hang on them.

Provide hygiene education. Behaviors known to increase a family's vulnerability or exposure to the disease must be changed.

Promote community participation as an integral part of water and sanitation and hygiene education programs.

Carry out institutional and human resource development programs to strengthen sector agencies.

Put in place **financial management** systems.

Decisions on use of resources and cost recovery should be made rationally.

Institute laws and regulations to create a favorable setting for sector agencies to safeguard public health.

Create mechanisms for inter-agency collaboration.

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Four Steps to Cholera Prevention Planning

When a country is faced with the threat of cholera, the first reaction may be confusion or panic. There is so much that needs to be done; it is hard to know where to begin. It is not a realistic option in the short- or medium-term to conceive of universal water and sanitation coverage as the solution to cholera. Instead, governments must use the resources available to control the spread of cholera and to lay the groundwork for future overall improvements in water and sanitation.

The four-step planning process described here has been developed and used successfully by WASH, and WASH can provide consultant assistance to countries that wish to go through it. Some countries may have the resources to carry out the steps themselves; however, WASH has found that the know-how for such planning is often not present. Also, it is sometimes preferable for outsiders to guide the process because they can bring a non-biased viewpoint.

Step One: Gathering and analyzing information. A multidisciplinary team of two or three specialists (often outside consultants) carries out a rapid assessment of the water/sanitation/hygiene education situation in the country using the framework for thinking about cholera outlined above. The information gathering focuses on identifying the most vulnerable groups and the most prevalent transmission routes. On the basis of the assessment, the team members recommend preventive actions, specifying which resources are available and which are needed.

Step Two: Prioritizing the recommended actions. The team members meet with their government counterparts, discuss the recommended actions and rank them according to their **feasibility** and potential **impact on cholera**. Feasibility is largely a matter of cost and institutional capacity. Recommended actions should be matched with available resources.

Step Three: Finalizing the list of recommendations. The team writes its final report, which includes a list of recommendations to the government. Recommendations with both short- and long-term impacts are included.

The process can end at step three if the government is in a position to implement the recommendations without further assistance. Such a situation is rare, however, because the recommendations will probably not all be aimed at one agency or one ministry. Efforts that require coordination among several governmental entities, each guarding their prerogatives and unused to working together, are hard to get going. Normally there are no mechanisms in place for encouraging such coordination. Recognizing the problems inherent in inter-ministerial planning, a government may elect to move on to step four.

Step Four: Developing an action plan. Representatives from concerned ministries participate in an inter-ministerial planning workshop to mold the recommendations (and other actions) into an effective, unified cholera control plan.

The essence of the four-step process is **planning on the basis of information in an atmosphere of collaboration**. When resources are tight and myriad problems compete for government attention, careful planning is indispensable. And in the presence of cholera, with its health and economic toll, being prepared is half the battle.

Public health officials predict that cholera will spread throughout Latin America and become endemic there, as it has in Asia and Africa, for the foreseeable future—until environmental health conditions improve markedly. In Latin America, good treatment has kept the fatality rate at about 1%, but such treatment is expensive and diverts resources from other programs. In Africa the death rate ranges from an average of 6 to 10% (in some

areas it is as high as 30%), reflecting the inability of many African countries to muster a strong public health response to the disease. (In Africa 12,633 deaths due to cholera were reported for 1991.)

Cholera has been feared for generations. Its onset is sudden, and it can lead rapidly to death; it brings with it losses in trade (and tourism) that cause hardship and dislocation. In the last century, cholera epidemics frightened authorities in New York and London and other cities into building sanitary sewers and filtered water systems. Today, the need for safe water and sanitation is just as acute in many Third World cities as it was in 19th century Europe.

The steps outlined in this Fact Sheet for cholera preparedness focus on short-term activities for halting cholera in an emergency situation, but they also look to the future and prepare the ground for longer-term improvements in the sector, leading to expanded infrastructure and education that eventually can make cholera a disease of the past.

For more information on the technical assistance WASH can provide with this four-step decision-making process, contact WASH headquarters.

WASH consultant services may be requested by an A.I.D. mission or Washington bureau or office. All requests should be channeled through A.I.D.'s Office of Health in the Bureau for Research and Development. Non-governmental and private voluntary organizations may also request WASH services through an appropriate A.I.D. mission or bureau.

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