Department of Health
REPUBLIC OF CHINA

25 June 1991/Vol. 7/No. 6

Epidemiology Bulletin

— Contents —

Cholera –

The epidemic in Peru

Although there is no cholera cases reported from 1962 in Taiwan, the pressure to us does not decrease. To make the public to be cautious of the disease, this paper is summarized from Weekly Epidemiological Record, No. 9, March 1991, for the readers to take it for reference.

Brief historical review

Cholera is one of mankind's oldest diseases. During the nineteenth century it reached Europe for the first time and caused 6 major pandemics, earning its reputation as a killer disease. After the sixth pandemic, cholera returned to Asia, its region of origin.

The seventh pandemic began in 1961 when *Vibrio cholerae*, biotype El Tor, spread outside its endemic area in the Celebes (Sulawesi), in Indonesia, probably because of increased population movements. It first reached other countries in eastern Asia, and affected Bangladesh towards the end of 1963, India in 1964 and the USSR, Iran and Iraq in 1965-1966.

In 1970 cholera invaded West Africa which, apart from an outbreak in 1868 in the Senegambia region and another poorly reported incident in 1893, had always remained free from the disease. For the first time since the start of the seventh pandemic, cholera spread very rapidly across a vast territory hitherto untouched by it. Shortly after its introduction into a country, it spread following the coastline or the watercourses with fishermen and tradesmen and later reached other parts of the continent along land communication routes. The disease ultimately became endemic, particularly in the coastal areas where the temperature, humidity, rainfall and population density are conducive to its persistence *(Map 1)*.

Cholera also made many raids into the industrialized countries during the 1970s, but effective health services and surveillance activities always prevented its effective installation in these countries.

During the 1980s the number of cases reported each year fell back to the level that obtained prior to 1970, but on the other hand, the number of countries reporting cases increased three-fold by comparison with the previous period *(Table 1 and Map 2)*

Table 1 Number of cases of cholera notified in the world, 1961-1990

1961	1962	1965	1970	1973	1982	1986	1987	1988	1989	1990
49,951	41,575	58,816	68,828	112,241	54,856	46,473	48,507	44,083	53,970	29,319 (provisional-provisoire)

The current epidemic in Peru

Only one region of the world, South America, had been spared by cholera during this pandemic. Indigenous cases have occurred in only one country of the Americas, the United States of America (and possibly Mexico), where sporadic cases were detected for the first time in 1973 (1 case) and during the summer of 1978.

The cholera epidemic in Peru is therefore the first manifestation of this pandemic in the Americas.

1. The latest official report from Peru dated 21 February 1991 informed the Pan American Health Organization (PAHO) that 32 585 cases of cholera had occurred with 6, 501 hospitalizations and 139 deaths.

2. Cases have been reported from the entire coast of Peru, and the epidemic is now reported spreading inland.

3. Suspected cases are reported on the north coast near Ecuador and at the southern tip of Peru.

Guidelines for cholera control

1. Following 3 decades of *research* it can be stated that:
   - treatment of cholera in appropriately equipped establishments can reduce the case-fatality rate to less than 1%;
   - vaccination and mass chemoprophylaxis are ineffective for the prevention and control of epidemics;
   - when cholera is endemic it accounts for fewer than 5% of all cases of acute diarrhoea;
   - over 90% of cholera cases are mild, and difficult to distinguish clinically from other types of acute diarrhoea.
2. The best-known *sources of infection* are:
   - Drinking-water that has been contaminated at its source or during storage.
   - Fish, and particularly shellfish taken from contaminated water and eaten raw or insufficiently cooked.
   - Contaminated foods (e.g., milk, cooked foods such as rice, lentils, potatoes,

kidney beans, eggs, chicken, etc.).
Vegetables that have been fertilized with night-soil or "freshened" with contaminated water.

Treatment

Most cholera patients can be adequately treated by the oral administration of a glucose-eectrolyte solution, the contents of which approximate the water and electrolyte composition of the diarrhoeal stool. Intravenous electrolyte solutions containing alkali and potassium salts should normally be used only for the initial rehydration of severely dehydrated patients who are in shock or unable to drink.

For oral rehydration, an oral rehydration salts (ORS) solution is recommended. Prepackaged ORS is available. Ringer's Lactate Solution (Hartmann's Solution for injection) is the fluid recommended for intravenous rehydration as it is commonly available commercially and its composition is suitable for treatment of all acute diarrhoeas in patients of all ages.

Normal saline or half-normal saline solutions are less effective, but can be used if Ringer's Lactate Solution is unavailable. *Plain glucose in water is ineffective and should not be used.*

During an outbreak, usually 80-90% of patients can be treated by oral rehydration alone, using ORS solution. Most patients who at first need intravenous fluid can thereafter be treated with ORS until diarrhoea stops.

In ssevere cholera cases, antibiotics can reduce the volume and duration of diarrhoea, and shorten the period during which cholera vibrios are excreted. Antibiotics should be given orally as soon as vomiting stops, usually within a few hours of beginning rehydration. There is no advantage to using injectable antibiotics, which are more expensive.

Tetracycline is the antibiotic of choice in most places. Doxycycline, a long-acting form of tetracycline which is administered only once, is preferred, when available, because of the considerable advantage of single-dose treatment *(Table 1)*.

Preventing the spread of outbreaks

People get cholera from drinking water or eating food contaminated with cholera organisms. When cholera appears in a community, activities must be intensified to promote the sanitary disposal of human waste, a safe water supply, and safe food preparation.

The community should be kept actively informed and educated about the extent and severity of the outbreak, the effectiveness and simplicity of current treatment methods, and the benefits of reporting cholera cases promptly. They should be told of sources of contamination, and ways to avoid infection.

Disposing of humon waste

Appropriate facilities for human waste disposal are a basic need of all communities; in areas threatened by cholera, constructing such facilities is vital. With the cooperation of the community, sanitary systems, e.g., latrines, should be constructed, with attention to local customs and the existing terrain. They should be located so that they cannot contaminate wells.

Food imports

WHO has no documented evidence of any cholera outbreak occurring as a result of the importation of food across international borders. In fact, cholera has been endemic for decades in many countries of Africa and Asia which continue to export food without the importing countries reporting any cholera outbreak as a result.

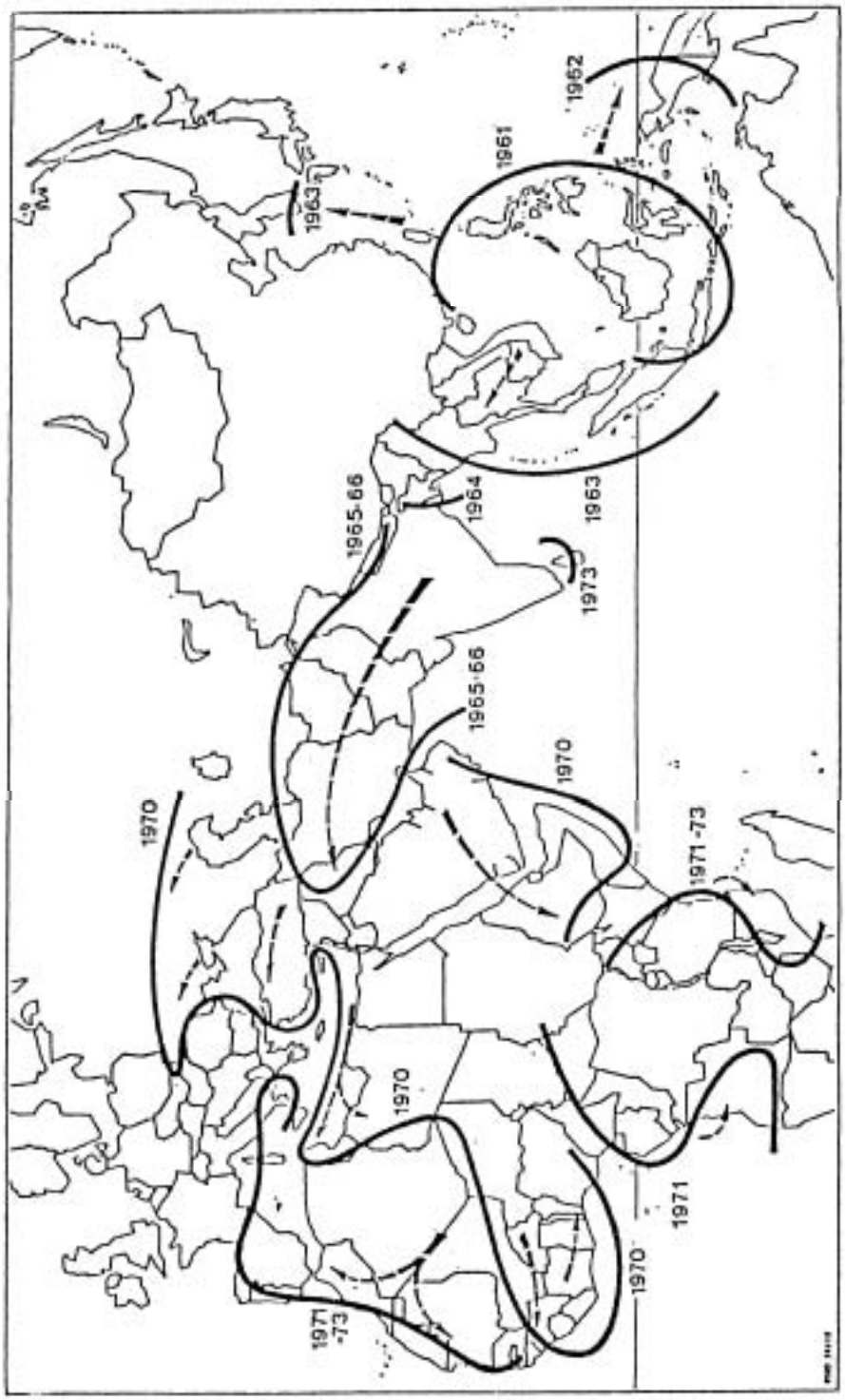
Table 2 Cholera epidemic: cumulative number of cases, hospitalizations and deaths, Peru, 1991

Location	Number of cases	Number of hospitalizations	Number of deaths
Lima Lima-Callao	14,907	2,105	48
Ancash-Chimbote	9,648	2,750	22
Ancash	100	81	7
Apurimac	4	4	–
Arequipa	345	25	–
Cajamarca	144	111	7
Huanuco	1	1	–
Ica	1,388	27	–
Junin	21	21	7
La Libertad	2,606	796	17
Lambayeque	29	3	–
Loreto	2	1	–
Moquega	2	2	–
Piura	3,313	547	26
Puno	55	23	4
Tacna	16	3	–
Tumbes	4	1	1
Total	32,585	6,501	139

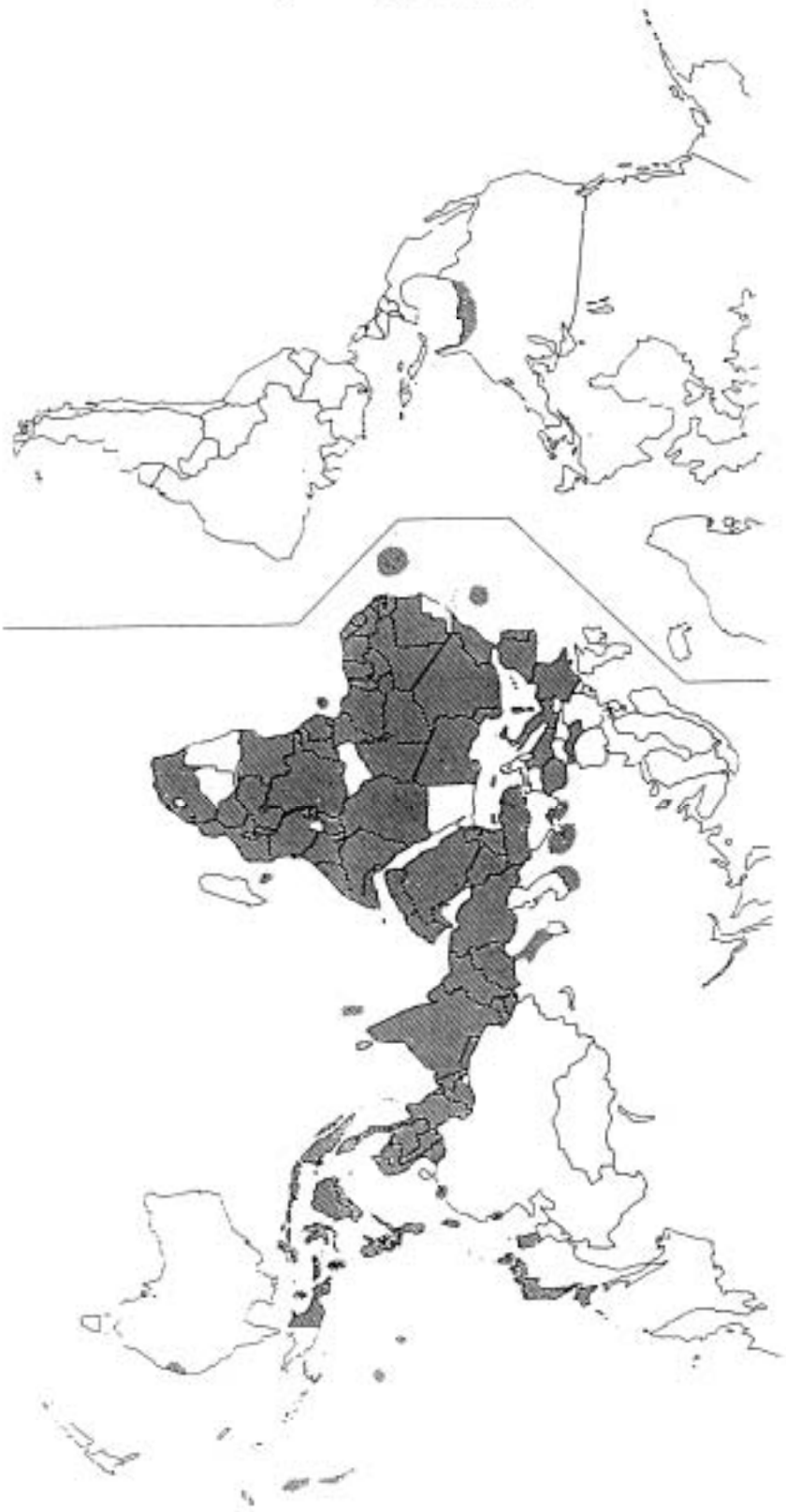
Table 3. Antibiotics used to treat cholera

	Dosage	
	Children	Adults
Antibiotic(s) of choice		
Tetrocycline 4 times per day for 3 days	12.5mg/kg	500 mg
or		
Doxycycline a single dose	(not recommended) for children)	300 mg
Alternatives (when strains are resistant to tetracycline)*		
Furozolidone 4 times per day for 3 days	1.25mg/kg	100 mg
or		
Trimethoprim (TMP)-Sulfomethoxazole (SMX) twice a day for 3 days	TMP 5 mg/kg and SMX 25mg/kg	TMP 160mg and SMX 800mg

* Erythromycin and chloramphenicol moy also be used when other recommended antibiotics are not available.



Map 1. Global Spread of Cholera, 1961–1973



Map 2. Countries, or areas within countries, reporting cholera 1961–1990