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**WHO Report on Global Surveillance of Epidemic-prone
Infectious Diseases**

World Health Organization

Department of Communicable Disease Surveillance and
Response

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CHAPTER 4

CHOLERA

Background of the disease

Cholera is an acute bacterial infection of the intestine caused by ingestion of food or water containing *Vibrio cholerae*, serogroups O1 or O139. Symptoms include acute watery diarrhoea and vomiting which can result in severe dehydration or water loss. When left untreated, death can occur rapidly – sometimes within hours.

Cholera is transmitted through contaminated food or drinking-water, as well as by person-to-person contact through the faecal-oral route. Sanitary conditions in the environment play an important role since the *V. cholerae* bacterium survives and multiplies outside the human body and can spread rapidly where living conditions are crowded and water sources unprotected and where there is no safe disposal of faeces. These conditions are met in poor countries and in many refugee camps. For example, in 1994 in a refugee camp in Goma, Democratic Republic of the Congo, a major epidemic took place. An estimated 58 000–80 000 cases and 23 800 deaths occurred within one month.¹

Epidemics of cholera-like diseases have been described by visitors to the Indian sub-continent as far back as the early sixteenth century and continuing through the nineteenth century. Beginning in 1817 cholera spread periodically to other parts of the world, in pandemic waves, retreating to its endemic area in South-East Asia between pandemics. The current seventh pandemic caused by the El Tor biotype of *V. cholerae* O1 began in 1961 in Sulawesi, Indonesia and spread rapidly to other countries in Asia, Europe and Africa and finally to Latin America in 1991, after almost a century without cholera. It spread very rapidly in Latin America causing nearly 400 000 reported cases and over 4000 reported deaths in 16 countries of the Americas that year.

During the 1990s a new epidemic strain, *V. cholerae* O139 Bengal was identified. It caused large outbreaks in India and Bangladesh beginning in 1992. Until then only *V. Cholerae* O1 was known to cause epidemic cholera. *V. cholerae* O139 Bengal is still restricted to Asia.

The seventh pandemic is still ongoing and shows signs of increasing further, rather than abating. Nearly 120 countries reported indigenous cases of cholera to WHO since 1991, and nearly half of those countries have reported cholera for at least five of the last eight years. This reflects the fact that cholera is a recurring problem in many areas, and it has become endemic in others.

Research has shown that the El Tor biotype is more likely to ‘produce inapparent infections, persist longer in the environment, multiply more rapidly following inoculation into foods, and evoke less complete immunity’² than the classical biotype. This has important implications for the control of cholera, which will need to take into consideration both the potential of cholera to spread to new areas where there are susceptible populations causing large epidemics, as well as the need to control cholera in new areas of endemicity, such as parts of Africa and the Americas.

¹ Goma Epidemiology Group. Public health impact of the Rwandan refugee crisis: What happened in Goma, Zaire in July 1994? *Lancet*, 1995, 345:359-361.

² Mintz ED, Tauxe RV, Levine MM. The global resurgence of cholera. In: Noah N and O’Mahony M, eds. *Communicable disease epidemiology and control*. Chichester, UK, John Wiley and Sons, 1998.

Description of the data

Cholera was the first disease for which modern public health surveillance and reporting was carried out in an organized way. It is one of the three diseases currently reportable under the International Health Regulations (IHR) of 1969. According to those regulations, national health administrations should report the first cases of cholera on their territory to WHO within 24 hours of their being informed. This applies to both indigenous cases of cholera as well as imported cases. Cholera cases and deaths reported to WHO during the week are published in the *Weekly Epidemiological Record* (WER). In addition the WER provides annual summary tables of cholera cases and deaths as well as short notes on outbreaks of cholera. Reports of important outbreaks also appear on the WHO web pages under Disease Outbreak News as listed in the references. Data presented in this chapter, include reports of cholera dating back to 1949 for Asia when cases were first reported in that continent. For Africa the data began in 1970 with the acceptance of the International Health Regulations. This covers a relatively long period of time and allows recent trends in cholera incidence and mortality to be interpreted in light of past experience. The annual number of reported cases of cholera for each country is presented at the end of the chapter.

Strengths and weaknesses of the data

The data presented in this report have been obtained from official reports to WHO. As is the case with other diseases under the IHR, notification of cases is mandatory, but reporting is not complete. Countries are reluctant to report cholera for political and economic reasons. They fear loss of tourism and trade, and travel restrictions. This results in considerable delays in reporting, and in substantial underreporting of cases. For a few countries, there have been no cases of cholera reported for many years, despite references in the literature to many cholera cases in those countries. Often cholera is reported to WHO as acute watery diarrhoea, in order to avoid the perceived negative consequences of reporting cholera, while at the same time acknowledging a severe epidemic of diarrhoeal disease.

Poorly functioning surveillance systems in some parts of the world (particularly in Africa) contribute to the underreporting of cases. Thus, not only are there many more cases of cholera than the number reported, but also the completeness of the reporting varies considerably by country.

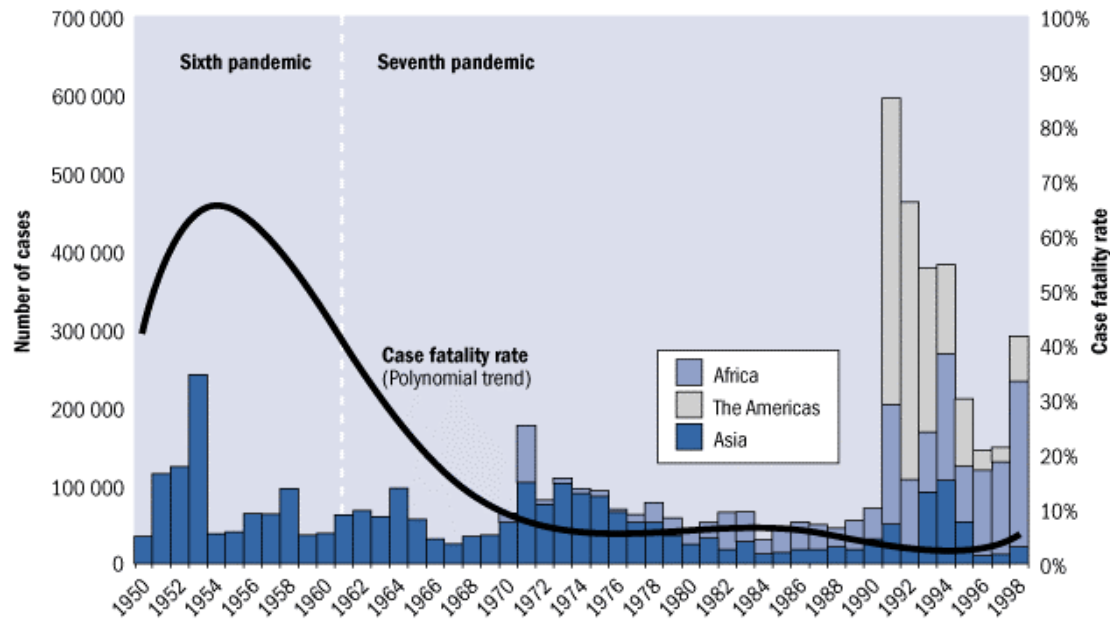
Trends

Incidence

- Cholera is a major public health problem that is becoming increasingly important as the number of countries affected continues to increase.
- New major outbreaks of cholera are continuing to occur, especially in the wake of climate changes.
- During 1998, there was a dramatic increase in the number of cholera cases worldwide compared to 1997, with the total number of cases almost doubling.
- Africa reported 211 748 cases in 1998, the highest number of cases ever reported and accounted for 72% of the global total. There had been a sudden increase of cholera at the end of 1997 in the Horn of Africa, and this continued throughout 1998 and spread to many other countries. During the year, major outbreaks occurred in the Democratic Republic of the Congo, Kenya, Mozambique, Uganda and the United Republic of Tanzania. There was a large increase in reported cholera cases in west Africa. Eleven countries reported outbreaks of cholera in September 1998.

- The Americas reported an upturn in cholera cases from 17 760 in 1997 to 57 106 in 1998. This reverses the downward trend in the region. The increase affected Peru primarily, as well as Ecuador, Guatemala and Nicaragua. This recrudescence is most probably related to the continuing effects of major disasters caused by El Nino and Hurricane Mitch.
- The number of cases reported in Asia continued the rise that began in 1997. There were more than twice as many cases in 1998 compared to 1997, with large increases in reported cases in Afghanistan, India, Cambodia, Malaysia, Nepal and Sri Lanka.

Fig. 4.1 Cholera, reported number of cases and case fatality rates, 1950-1998

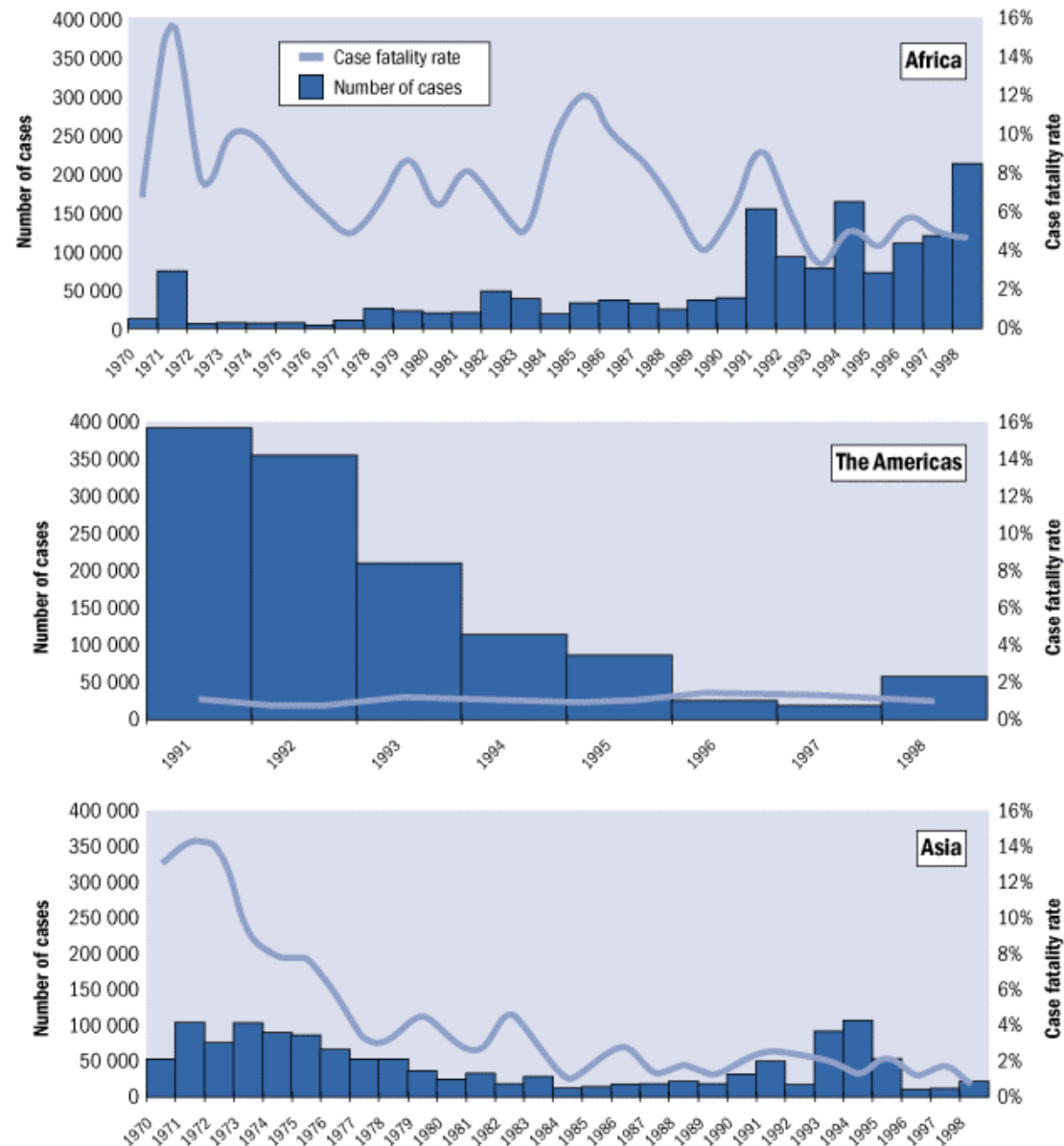


Deaths

- Figs. 4.1 and 4.2 present the annual number of reported cases of cholera from each continent since 1950 during the sixth pandemic. Case fatality rates were very high at that time and as many as 50-70% of cases died. With the replacement of classical cholera with El Tor, a less virulent strain, case fatality rates reduced dramatically during the 1960s. They have been further reduced, through better treatment and in particular more widely available oral rehydration therapy which was introduced during the early 1970s but which became widely available in many parts of the world during the 1980s.
- For the majority of cases, treatment with oral rehydration is sufficient. However, when either safe water or oral rehydration salts are not available, case fatality rates can be very high. A case fatality rate of 25-50% was estimated in refugee camps in Goma amongst those who were not treated. Where good treatment is readily accessible, the case fatality rate is less than 1%. Nowadays there are still large differences in case fatality rates from outbreak to outbreak. These differences are mainly due to differences in access to appropriate treatment and not because of alterations in virulence.
- In Africa, there has been a marked decline in case fatality rates since 1970, however Africa continues to have the highest reported case fatality rates (close to 5% in 1998) compared to the rest of the world.
- In Asia, reported case fatality rates have declined markedly since 1970, with a case fatality rate under 1% for 1998.
- Average case fatality rates for Europe and the Americas continue to hover around 1%.

- Since the case fatality rates are so different in different parts of the world, the global case fatality rates reflect only partly the trends in each region, as the global rates are also affected by the global distribution of cases.

Fig. 4.2 Cholera, reported number of cases and case fatality rates, per continent



Conclusions

1. The seventh pandemic is still ongoing and the number of affected countries continues to increase especially in Africa.
2. We do not know whether epidemic strain *V. cholerae* O139 Bengal will continue to be restricted to its present geographical area, or spread further. The threat of a new pandemic caused by *V. cholerae* O139 Bengal cannot be ruled out.

3. An increasing number of geographic areas are becoming endemic for cholera reflecting a failure of effective epidemic control.
4. Case fatality rates in Africa remain unacceptably high.

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Publications and Documents

Cholera and other epidemic diarrhoeal diseases control – Technical cards on environmental sanitation, World Health Organization, 1997. WHO/EMC/DIS/97.6.

Epidemic diarrhoeal disease preparedness and response – Training and practice, 1998. Facilitator's guide, World Health Organization, 1997, WHO/EMC/DIS/97.4 Rev.1.

Epidemic diarrhoeal disease preparedness and response – Training and practice, Participant's manual, World Health Organization, 1997, WHO/EMC/DIS/97.3.

Guidelines for cholera control, 1993, World Health Organization, Geneva.

Management of the patient with cholera, World Health Organization, 1992, WHO/CDD/SER/91.15 Rev1 (1992).

Web Pages

Cholera fact sheet:

<http://www.who.int/inf-fs/en/fact107.html>

Epidemic dysentery fact sheet:

<http://www.who.int/inf-fs/en/fact108.html>

Cholera: basic facts for travellers:

<http://www.who.int/emc/diseases/cholera/factstravellers.html>

Cholera in Disease Outbreak News:

http://www.who.int/emc/outbreak_news/disease_indices/chol_index.html

WHO cholera web pages:

<http://www.who.int/health-topics/cholera.html>

Cholera cases reported to WHO, by country, 1998 (annual):

<http://www.who.int/emc/diseases/cholera/choltbl1998.html>

Cholera cases reported to WHO, by country, 1999 (annual):

<http://www.who.int/emc/diseases/cholera/choltbl1999.html>

Cholera cases reported to WHO, by country, 2000 (monthly):

<http://www.who.int/emc/diseases/cholera/choltbl2000.html>

Videos

Cholera: the unnecessary disease. (31 mn)

A new time for cholera (*Vibrio cholerae* 0139). (24 mn)

<http://www.who.int/emc/diseases/cholera/videos.html>

Table 4.1 Cholera, cases and total number of deaths reported to WHO, and number of countries reporting, 1950-1998

Africa	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Algeria		1,332	646	605	738	1,165	286	262	220	2,513	614			218	45
Angola		1	268	263	934	88		726							
Benin	175	2,133	250	3	73	45	146	2			3	2	3	1	1
Burkina Faso	1	1,761	1	1,118	632	3			1						2,191
Burundi									8,297	915	2,039	582	415	512	180
Cameroon		2,167	362	206	83	3	135		3	16	229	243	5	55	392
Cape Verde					303	20	219								
Central African Republic															
Chad		8,230	9		338										
Comoros						2,675	5								
Congo									51	5					
Cote d'Ivoire	868	668								3			34		
Dem. Rep. of the Congo									3,481	5,515	1,051	2,379	10,328	2,977	162
Djibouti	6	440	8				2	2	3						
Equatorial Guinea															404
Ethiopia	850	2,187													
Gabon										5		7			
Gambia															
Ghana	2,733	13,048	625	677	483	187	102	6,565	1,853	1,783	260	943	11,051	14,160	1,015
Guinea	2,000														
Guinea Bissau															
Kenya		239	51		402	1,093	1,359	21	673	1,070	2,808	2,424	3,498	1,049	14
Liberia	168	606	947	1,336	512	704	646	512	422	438	2,690	1,582	670	183	492
Libyan Arab Jamahiriya	1,151														
Madagascar		2													
Malawi				371			19	577	263			261		487	
Mali	2,665	4,792	2	219	130										1,795
Mauritania		1,139	148	150											166
Morocco		56	7				2								
Mozambique				453	1,018	11	3	18		4,564	1,212	1,753	2,301	10,745	521
Niger	16	9,265	51	121	286							7			3,788
Nigeria	15	22,931	1,363	157		38	112	376	197	293	138	107	248	178	1,667
Rwanda									838	5	30	24	201	54	161
Sao Tome and Principe															
Senegal		265	379						315	103		428			728
Sierra Leone	293	211						12							

Table 4.1 Cholera, cases and total number of deaths reported to WHO, and number of countries reporting, 1950-1998

Africa	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Somalia	43	89													
South Africa				1	37					2	859	4,180	11,968	4,715	1,182
Sudan										845	17				
Swaziland									2			238	538		
Togo	75	335	16		58			132	6						
Tunisia	27		4	656											
Uganda		757				3			1,120	940	1,539		190		
United Republic of Tanzania					10			297	6,608	2,559	5,196	4,241	4,071	1,816	2,600
Zambia									263	12	57	14	1,403	233	
Zimbabwe				1	37	615	144								
Total no. of cases	11,086	72,654	5,137	6,337	6,074	6,650	3,180	9,502	24,643	21,586	18,742	19,415	46,924	37,383	17,504
Total no. of deaths	747	11,427	386	636	582	504	194	462	1,591	1,869	1,185	1,581	2,988	1,903	1,711
No. of countries reporting	16	23	18	16	17	14	14	13	20	19	16	18	16	15	19
Oceania ¹	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Australia			40					2	1	1	2	2	1	4	1
Guam					6			1				4	2	1	
Kiribati								1,307	494						
Northern Mariana Islands															
Micronesia (Federated States of)															
Nauru									38	50					
Papua New Guinea															
New Zealand			3												
Samoa											1				
Trust Territories of the Pacific ²										13			2,214	321	19
Tuvalu															
Total no. of cases			43		6			1,310	533	64	3	6	2,217	326	20
Total no. of deaths			1		1			21	0	0	0	0	17	1	0
No. of countries reporting	0	0	2	0	1	0	0	3	3	3	2	2	3	3	2

¹In the 1960s the following countries reported cholera: Papua New Guinea: 1962: 1293 cases and 464 deaths and Australia: 1969: 1 case, no deaths.

²The Trust Territories of the Pacific consisted of the Federated States of Micronesia, Marshall Islands, Palau, and the Northern Mariana Islands.

Table 4.1 Cholera, cases and total number of deaths reported to WHO, and number of countries reporting, 1950-1998

Africa	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Algeria			1,507	699	393	1,293	1,991	69		118				
Angola			16,222	15,500	17,601	9,527	8,590	3,608		3,443	3,295	1,306		
Benin		243					7,474	413	10	187	203	6,190	778	206
Burkina Faso	1,149						537				1,451	425		1,036
Burundi	259		523	571	94	82	3	479	78	562	2,297	418	1,959	1,067
Cameroon	1,158	165	94	4	4	16	4,026	1,268	648	527	615	5,796	1,709	4,603
Cape Verde										128	12,913	426		133
Central African Republic													443	4,095
Chad							13,915			1,094		7,830	8,801	22
Comoros														7,300
Congo													275	3,222
Cote d'Ivoire							604	37	724	1,108	4,993	1,345		
Dem. Rep. of the Congo	740	1,059	1,150	295	99	468	4,066	1,949	986	58,057	553	7,888	2,421	34,899
Djibouti	115								10,055	1,122			2,424	164
Equatorial Guinea	108													
Ethiopia														
Gabon														
Gambia	2									1	15	7		
Ghana	60					2,937	13,172	228	1,448	2,267	4,698	1,665	379	3,426
Guinea		286								31,415	6,506	287		881
Guinea Bissau		200	2,443							15,296	119	8,397	20,555	126
Kenya	1,352	839	255		918			3,388		880	1,543	482	17,200	22,432
Liberia	355	59	33	68	28		132			764	3,420	8,922	91	2,123
Libyan Arab Jamahiriya											22			
Madagascar														
Malawi				6	8,351	13,457	8,088	298	25,193	107	1	1	130	1,745
Mali	3,759	1,916	352								2,048	5,723	6	
Mauritania	259	3,734	1,578	575	700							4,534	462	
Morocco										6				
Mozambique	3	1			371	4,152	7,847	30,802	19,803	692			8,739	42,672
Niger					166		3,238			732	264	3,957	259	
Nigeria	30	91	1,290	137	1,078		59,478	7,671	4,160	2,859	1,059	12,374	1,322	3,464
Rwanda	21	226	101	70	1		679	530	568	10	3	106	274	3,220
Sao Tome and Principe					3,953	804	3							
Senegal	2,988	476	3,150	390							3,222	16,107	371	
Sierra Leone		8,957	557							9,709	10,285			2,096

Table 4.1 Cholera, cases and total number of deaths reported to WHO, and number of countries reporting, 1950-1998

Africa	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Somalia	10,199	15,980								27,904	9,255	10,274	6,814	4,404
South Africa	2,742	120	37				10	11	78	4				20
Sudan	4,457													
Swaziland								2,281				2		7
Togo				1			2,396	753	19	47	65	146	42	3,217
Tunisia														
Uganda			140				279	5,072		704	538	291	2,610	49,514
United Republic of Tanzania	1,984	1,231	1,892	5,267	2,150	2,230	5,676	18,526	792	2,240	1,698	1,464	40,249	14,488
Zambia					44	3,717	13,154	11,659	6,766			2,172	36	171
Zimbabwe	144	2						2,039	5,385					995
Total no. of cases	31,884	35,585	31,324	23,583	35,951	38,683	155,358	91,081	76,713	161,983	71,081	108,535	118,349	211,748
Total no. of deaths	3,837	3,490	2,658	1,500	1,445	2,288	13,998	5,291	2,532	8,128	3,024	6,216	5,853	9,856
No. of countries reporting	21	18	17	13	16	11	22	20	16	28	26	28	25	29
Oceania	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Australia	2		1	1		2		3	5	3	5	2	2	5
Guam	5	3	1			1				1		1		2
Kiribati														
Northern Mariana Islands												1	3	
Micronesia (Federated States of)						34								
Nauru														
Papua New Guinea														
New Zealand						3				2	2			1
Samoa														
Trust Territories of the Pacific ²														
Tuvalu						27		293						
Total no. of cases	7	3	2	1		67		296	5	6	7	4	5	8
Total no. of deaths	0	0	0	0		1		8	0	0	0	0	0	0
No. of countries reporting	2	1	2	1	0	5	0	2	1	3	2	3	2	3

¹In the 1960s the following countries reported cholera: Papua New Guinea: 1962: 1293 cases and 464 deaths and Australia: 1969: 1 case, no deaths.

²The Trust Territories of the Pacific consisted of the Federated States of Micronesia, Marshall Islands, Palau, and the Northern Mariana Islands.

Table 4.1 Cholera, cases and total number of deaths reported to WHO, and number of countries reporting, 1950-1998

The Americas	1991	1992	1993	1994	1995	1996	1997	1998
Argentina		553	2,080	889	188	474	637	12
Belize		159	135	6	19	26	2	28
Bolivia	206	22,260	10,134	2,710	2,293	2,847	1,632	466
Brazil	1,567	30,309	59,212	49,455	15,915	4,634	2,881	2,571
Canada	2	4	6	2	7	2		2
Chile	41	73	32	1		1	4	24
Colombia	11,979	15,129	230	996	1,922	4,428	1,508	442
Costa Rica		12	14	38	24	19	1	
Ecuador	46,320	31,870	6,833	1,785	2,160	1,059	65	3,724
El Salvador	947	8,106	6,573	11,739	2,923	182	0	8
French Guiana	1	16	2	2				
Guatemala	3,674	15,395	30,604	5,282	7,970	1,568	1,263	5,970
Guyana		576	66					
Honduras	11	384	4,007	4,965	4,717	708	90	306
Mexico	2,690	8,162	10,712	4,059	16,430	1,088	2,356	71
Nicaragua	1	3,067	6,631	7,821	8,825	2,813	1,283	1,437
Panama	1,178	2,416	42					
Paraguay			3			4		
Peru	322,562	212,642	71,448	23,887	22,397	4,518	3,483	41,717
Suriname		12						
United States of America	26	102	19	47	19	3	4	15
Venezuela	15	2,842	409			269	2,551	313
Total no. of cases	391,220	354,089	209,192	113,684	85,809	24,643	17,760	57,106
Total no. of deaths	4,002	2,401	2,438	1,107	845	351	225	558
No. of countries reporting	16	21	21	17	15	18	16	16

Table 4.1 Cholera, cases and total number of deaths reported to WHO, and number of countries reporting, 1950-1998

Asia	1950-1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Afghanistan	1,105														
Armenia															
Azerbaijan															
Bahrain	1			74	37					906	39				
Bangladesh	239,667	7,419	2,342	1,059	1,969	5,614	4,888	957	10,403	5,576	2,154				
Bhutan															
Brunei Darussalam	199	24												6	
Cambodia	427				159	145	66								
China	386										85	88			
Dem. People's Republic of Korea												170			
Georgia															
Hong Kong SAR	300							1		2	4		3	8	
India	946,794	15,067	71,386	20,435	41,611	30,903	22,049	14,946	8,376	10,585	5,073	8,344	4,681	4,656	8,542
Indonesia	4,738	5,997	23,555	44,383	52,042	41,474	48,387	41,264	17,112	10,683	18,817	5,541	18,354	10,391	13,832
Iran (Islamic Republic of)	5,977	19,663	344	322	55	304	2,966	2,100	10,836	264	1,856	1,599	6,034	427	270
Iraq	227								133	96					
Israel		185	1	11										1	
Japan	26	5					3	6	52	34	11	23	19	16	35
Jordan		3						152	427		141		870		
Kazakhstan															
Kuwait		4					3	2	13	1	3		8		
Kyrgyzstan															
Lao People's Dem. Republic	479														
Lebanon		54							30						
Maldives										11,336					
Macao SAR	71									12					
Malaysia	968	106	53	864	369	349	110	246	444	1,635	502	97	469	516	2,195
Mongolia															
Myanmar	16,333	911	378	180	386	2,363	2,942	1,519		3,551	874	1,018	28		989
Nepal	3,695	391	4	1	7	8	260	185	428	1,662	22	1	24		
Oman			9												
Pakistan	11,740	2	1,185					144	12				4		
Philippines	59,180	1,095	3,585	5,601	2,840	1,730	680	1,258	1,363	1,408	1,268	836	864	930	
Republic of Korea	1,964	475										145			
Saudi Arabia		266		303			91	50	18	30	23	2	13		
Singapore	68			114	1	8	10		11	83	10	18	34	31	14

Table 4.1 Cholera, cases and total number of deaths reported to WHO, and number of countries reporting, 1950-1998

Asia	1950-1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Syrian Arab Republic		49	5	505			67	795	2,362		689				
Sri Lanka					118	4,559	1,453	728	5	48	46	104	574	309	86
Tajikistan															
Thailand	19,739				844	1,475	1,335	6	383	4,183	1,788	4,331	39	638	1,497
Turkey		384							17						
Turkmenistan															
United Arab Emirates		8		2											
Uzbekistan															
Viet Nam	41,663	82	270	146	1,495	139	5	1,068	32	2	365	978	157	57	392
West Bank and Gaza Strip		239	1					42	3		9		168	5	25
Yemen			190	1,064	215	6	1			414	1,953	720			
Total no. of cases	1,355,747	52,429	103,308	75,064	102,148	89,077	85,316	65,469	52,460	52,511	35,732	24,015	32,343	17,991	27,877
Total no. of deaths	6,787	6,787	14,701	10,271	9,422	7,019	6,567	3,754	1,694	1,763	1,602	769	860	833	765
No. of countries reporting	23	22	15	16	15	14	18	19	21	21	22	17	18	14	11

Table 4.1 Cholera, cases and total number of deaths reported to WHO, and number of countries reporting, 1950-1998

Asia	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Afghanistan										37,046	38,735	19,903		4,170	10,000
Armenia															25
Azerbaijan											9				
Bahrain															
Bangladesh										12					
Bhutan								422	494			25			19
Brunei Darussalam															
Cambodia								770	1,229	2,252	3,085	4,190	740	155	1,197
China					7,865	6,158	639	205	580	11,717	34,821	10,344	312	1,163	
Dem. People's Republic of Korea															
Georgia										8					
Hong Kong SAR	1	2	30	4	2	29	5	5	3	30	56	6	4	14	71
India	2,527	5,808	4,208	9,375	8,917	5,026	3,583	6,993	6,911	9,437	4,973	3,315	4,396	2,768	7,151
Indonesia	7,921	4,732	11,915	659	50	67	155	6,202	25	3,564	47			66	
Iran (Islamic Republic of)	531	1,208	20	295	486	5,222	178	1,880	97	1,347	15	2,177		1,106	270
Iraq								877	97	280	838	820			53
Israel				2	1										
Japan	55	36	26	35	38	99	73	90	46	89	91	321	39	89	60
Jordan							2								
Kazakhstan										74	3	8		4	
Kuwait		113	38			133				1				1	
Kyrgyzstan											4				
Lao People's Dem. Republic										5,521	9,640	1,365	720		
Lebanon										344	3				
Maldives															
Macao SAR						3	1								8
Malaysia	67	52	55	584	753	350	2,071	506	474	995	534	2,209	1,486	389	1,304
Mongolia													177		
Myanmar						597	24	924	826	1,758	421	1,296			
Nepal						141	23,888	30,648	764	31	32	157	274	245	1,745
Oman															
Pakistan										12,092					
Philippines		10							345	708	3,340	847	1,402	605	729
Republic of Korea								113	6	5	34	74	7	10	
Saudi Arabia			74												
Singapore	40	27	27	63	19	39	26	34	17	24	41	14	19	19	31

Table 4.1 Cholera, cases and total number of deaths reported to WHO, and number of countries reporting, 1950-1998

Asia	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Syrian Arab Republic															
Sri Lanka					154			70	121	1				430	1,536
Tajikistan										165	10				
Thailand	645	899	213	6,353	2,248						3,487				
Turkey															
Turkmenistan											1			55	
United Arab Emirates															
Uzbekistan											1				
Viet Nam	22	502	525	188	338	143	358	52	4,260	3,361	5,776	6,088	566	4	13
West Bank and Gaza Strip											103				
Yemen									4						
Total no. of cases	11,809	13,389	17,131	17,558	20,871	18,007	31,003	49,791	16,299	90,862	106,100	53,159	10,142	11,293	24,212
Total no. of deaths	119	276	477	238	378	224	628	1,286	372	1,809	1,393	1,158	122	196	172
No. countries reporting	9	11	11	10	12	13	13	16	18	25	26	18	13	18	16

Table 4.1 Cholera, cases and total number of deaths reported to WHO, and number of countries reporting, 1950-1998

Europe	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Albania															
Andorra															
Austria												2			
Belarus															
Belgium											1			1	1
Czechoslovakia ¹	4														
Denmark															
Estonia															
Finland												1			
France	1	3		4	5	9	5			8	1	20	18	3	1
Germany		1	2	6	3	1	2	1			4	4	1		
Greece															
Hungary															
Italy				278		1		2		8					
Netherlands							1	1	4	5		2		2	
Norway															
Poland												1			
Portugal		64			2,467	1,066									
Republic of Moldova															
Romania															
Russian Federation	720						1	1							
Spain		22			5	11	2			267	4		2	2	4
Sweden		4		10	1		1			1					
Switzerland								1	1			2			
United Kingdom of G.B and N.I.	1	3	2	5	3	1	1	2			6	12	1	4	5
Ukraine															
Yugoslavia							3					2			
Total no. of cases	726	97	4	303	2,484	1,089	16	8	5	289	16	46	22	12	11
Total no. of deaths	1	4	0	23	48	8	2	0	0	8	0	0	0	0	0
No. of countries reporting	4	6	2	5	6	6	8	6	2	5	5	9	4	5	4

¹ Czechoslovakia dissolved on 31 December 1992.

Table 4.1 Cholera, cases and total number of deaths reported to WHO, and number of countries reporting, 1950-1998

Europe	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Albania										626				
Andorra									1					
Austria						2			1	1				1
Belarus										3	3			
Belgium	1							1	1	1				
Czechoslovakia														
Denmark						1			2	2	3			
Estonia									2					1
Finland										2	1			
France		37	7		1	6			5	4	5	6	3	2
Germany		2		2	1	1	7	1	1	5	1		2	5
Greece		1							1					
Hungary													1	
Italy										12	1			2
Netherlands				1		3			2	1	9	3	2	4
Norway			1		1						1			2
Poland										1				
Portugal										1	1			
Republic of Moldova									1	8	240			
Romania						270	226	3	15	80	118			
Russian Federation							3	6	23	1,048	9	1	4	10
Spain			3		3	11	1		3	1	6	1		
Sweden		1	1					1		1	2	1		
Switzerland	1			1				1	2		2			2
United Kingdom of G.B and N.I.	4	11	2	10	1	6	8	5	13	18	10	13	6	18
Ukraine						49	75			813	525			
Yugoslavia					4					2				
Total no. of cases	6	52	14	14	11	349	320	18	73	2,630	937	25	18	47
Total no. of deaths	1	0	0	0	0	2	9	0	0	0	0	0	1	0
No. of countries reporting	3	5	5	4	6	9	6	7	15	20	17	6	6	10

¹ Czechoslovakia dissolved on 31 December 1992