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CHOLERA UPDATE

During 1991, 15 countries in the Americas reported a total of 391,219 cholera cases and 4,002 deaths. At the end of the year, active transmission extended from Mexico to Bolivia and from the Pacific coast of Peru to the Atlantic coast of Brazil. The overall death-to-case ratio was 1%. Vehicles implicated in transmission included unboiled water from municipal systems, superficial wells and household containers; foods and beverages sold by street vendors; unreheated household foods; raw shellfish and fish; and raw vegetables contaminated with waste water. In 1992, four additional countries have been infected, and as of mid-June 1992, 19 countries had reported 196,276 cases and 1,167 deaths. Ten of the 14 countries infected in 1991 have had more cases in 1992 than in 1991. While the total number of reported cases has declined since March, several countries in Central and South America continue to have high levels of transmission.

The Organization has actively promoted the development and implementation of national plans for cholera prevention and control through its country offices, centers and regional programs. Technical cooperation has emphasized proper case management, detection and reporting of cases, provision of safe water, disposal of waste from high-risk sites, essential capability for assuring food safety, health education and public information. The Organization has mobilized over $21 million for cholera interventions and continues to assist Member Countries to obtain additional resources. A "Regional Plan for Investment in Environment and Health" (CE109/27) concerning the long-term investment needed to reduce the threat of cholera and other diarrheal diseases is being presented to the Executive Committee.

This report is presented to the Executive Committee as an update on the status of the cholera epidemic and on the activities the Organization, with emphasis on events since the meeting of the Directing Council in 1991. Though there is clear evidence of the success of interventions implemented by the countries, cholera remains a significant threat throughout the Region.

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CHOLERA UPDATE

I. SUMMARY OF CHOLERA IN 1991

A. The Epidemic

In January 1991, epidemic cholera appeared in the Americas for the first time in the twentieth century. Cases confirmed as infection with Vibrio cholerae O1 El Tor Inaba were identified in Chancay and Chimbote on the Pacific coast of **Peru** in the last week of January, and additional cases were confirmed in other communities along the 1200km coast north of Chancay during the first week of the epidemic. Within the next month, disease had spread to the interior of the country, and by the end 1991, Peru had reported 322,562 cases from all departments, producing an attack rate of nearly 1.5%. The two departments east of the Andes which form part of the Amazon basin were the most heavily infected, with an attack rate of 13%. The coastal departments north of Lima were also heavily affected.

Ecuador reported its first case on 1 March in a fishing village on the southern coast. Disease spread from there, primarily along the coast and major routes of communication, eventually reaching all provinces and producing a total of 46,320 cases, for an attack rate of 4.3 per 1000 population. Provinces along the coast were most heavily affected, and V. cholerae resistant to tetracycline and other antibiotics was identified in Guayaquil during the year.

In early March, cholera reached **Colombia** but appeared to spread more slowly in that country, though 28 departments and municipalities were infected by the end of 1991, with a total of 11, 979 cases reported (3.6 per 1000 population).

On 10 April **Brazil** reported its first case, on the Amazon River near the border with Colombia and Peru, and disease remained confined to that area for several weeks. However, increases in reported cases occurred after July and cholera spread eastward along the Amazon, reaching Manaus, the capital of Amazonas State, and then Belem, on the Atlantic coast, before the end of the year. Brazil reported a total of 1,507 cases.

Chile was also infected in mid-April, but apparently as a result of restrictions on the distribution and consumption of raw vegetables, the total number of cases was limited to 41, 33 in the metropolitan area of Santiago. However, V. cholerae was isolated from waste waters in various parts of the country after May, when the last known case was occurred.

Mexico detected it first case in a small, isolated village in the State of Mexico in mid-June. In spite of intensive efforts to contain the infection, the disease spread to the

Federal District and 15 other states, with those in the southern part of the country being most heavily affected. Mexico reported 2,690 cases during 1991.

Cholera spread to **Guatemala** at the end of July, initially to the coastal departments bordering Mexico and then to all other departments, producing a total of 3,674 cases. Guatemala had the fourth highest attack rate in the Americas, 39 per 100,000 population. **El Salvador** was infected in mid-August, with cholera eventually appearing in all departments. The first infections in **Panama** occurred in Darien Province, which borders Colombia and where the disease disseminated rapidly and intensively. Although only limited numbers of cases occurred outside Darien, Panama had the third highest attack rate in the Region, 48 per 100,000 population. **Honduras** and **Nicaragua** were infected in October and November, respectively, but Honduras detected only 11 cases and Nicaragua had a single case, a 45 day-old male with no known source of infection.

Bolivia was infected at the end of August, 7 months after cholera first appeared in Peru. Cases were largely confined to the regions around La Paz during 1991. **Venezuela** reported its first case at the end of November, and disease in that country occurred primarily in two western districts.

In summary, 15 countries of the Americas reported a total of 391,219 cholera cases during 1991, or 70% of cases reported worldwide. Infection extended from the United States in the north, which had 26 cases, to Chile in the south, and across the continent of South America from Piura in Peru, to Belem in Brazil. Total reported cases declined after the peak of the epidemic in March and April, but by the end of December 1991, several countries, including Peru, Ecuador and Brazil, were detecting increased numbers of cases.

B. Mortality and Transmission of Cholera

A total of 4,002 deaths from cholera were reported by countries of Latin America, producing an overall death-to-case ratio of 1%. Death rates were higher in several countries in the early stages of the epidemic, and within countries there were large differences between departments in death rates. Remote departments with indigenous populations had higher death rates than large municipalities. Lack of access to and use of health services were the most important factors contributing to cholera mortality.

Field investigations identified several risk factors for acquiring cholera: (1) drinking unboiled water from municipal systems and superficial wells, (2) consuming food and beverages sold by street vendors, (3) eating food left for more than 3 hours at

room temperature without reheating, (4) drinking water from household containers into which others put their hands, (5) eating raw fish or shellfish, and (6) consuming raw vegetables grown in fields irrigated with waste waters. While these risk factors for infection did not apply to all countries, they did allow for effective measures reducing the risk of transmission to be implemented in all countries of the Region.

II. CHOLERA IN 1992

As of 16 June 1992, 19 countries in the Americas were infected with cholera, including the 15 infected in 1991 and 4 (Costa Rica, Belize, Argentina and Suriname) newly infected in 1992. A total of 196,276 cases were reported with 102,996 persons hospitalized and 1,167 deaths.

In the Andean Area, Bolivia, Colombia, Ecuador, Peru and Venezuela all experienced marked increases in cholera during the first two months of 1992. In **Peru**, active transmission occurred in all departments but was particularly high in Lima, which produced half of the 142,253 cases reported in 1992 as of 5 May. In **Ecuador**, several coastal and mountainous provinces experienced increases in cases; Guayas Province accounted for 38% of the 23,894 cases detected as of 25 April. Although cholera had been confined to the region of La Paz during 1991, several districts of **Bolivia** were heavily affected during the first three months of 1992, including Cochabamba, Santa Cruz, Tarija and Chuquisaca. As of 11 April, Bolivia had reported 8,256 cases (compared with 206 in the 4 months of 1991) and 229 deaths, one fifth of the total deaths reported in the Region in 1992, producing a death-to-case ratio of 2.7%. **Venezuela** reported cases from 5 states and the Federal District, though the western State of Zulia remains the most heavily affected, with 667 of the 869 total cases reported.

The increase in cholera reported by **Brazil** in December 1991 continued through the first 21 weeks of 1992, with 6,875 cases reported from 14 states and municipalities, the most heavily affected being Pará, Paraiba, Pernambuco and Amazonas. Brazil reported 121 deaths (death-to-case ratio 1.8%).

Chile reported the reappearance of cholera at the end of January, initially in Arica near the border with Peru but subsequently in Iquique and Santiago. There had been 69 cases with one death by 18 May, with no additional cases by 14 June.

In Central America, both **Guatemala** and **El Salvador** registered significant increases in cases during January, possibly related to holiday travel and movement of migrant workers. Both countries have reported more cases in 1992 than in 1991, with considerable amounts of disease in and around the capital cities. Though cholera has been present in **Honduras** since October 1991, only 60 cases had been reported by 30

May 1992, 55 from the departments of Choluteca and Francisco Morazan. **Nicaragua** reported 150 cases and 4 deaths as of 30 May, with 52 in Managua and the remaining scattered in other provinces and localities. **Costa Rica** detected 7 imported and 1 autochthonous cases (along with 9 asymptomatic infections). **Belize** identified 3 cases in January 1992, all in the southern coastal district of Toledo, but has had no cases since then. **Panama** is the only country of Central America to have reported fewer cases by the end of May 1992 than in 1991, but the most affected areas in that country remain the Darien, Comarca San Blas and Panama District.

The two states of **Mexico** that did not report cases in 1991 have been infected in 1992, but the most affected areas continue to be states in the south.

French Guiana has reported 5 imported and 4 autochthonous cases. **Suriname** detected a single outbreak of 12 cases in Sipaliwini District, which borders French Guiana.

Cholera was first reported in **Argentina** on 5 February in the northern province of Salta. As of 14 April, Argentina had reported 284 cases and 15 deaths, with 208 cases and 13 deaths in Salta and the others in Jujuy, Formosa, Cordoba, Buenos Aires and the Federal Capital.

On 19 February, the **United States of America** reported confirmed V. cholerae O1 infection in passengers who had arrived in Los Angeles on an airline flight from Buenos Aires, Argentina, that had made a stopover in Lima, Peru. Subsequent investigation identified 75 cases of confirmed cholera among the 336 passengers and 20 crew; one passenger died. Infection was related to eating a cooked seafood salad that was prepared in Lima. A brief investigation of the catering company that provided the salad revealed no problems in food preparation. The United States reported 9 other cholera cases, 8 imported and one of unknown origin.

It should be noted that no updated report of cholera cases has been received in the past month from Colombia or Suriname.

III. RESPONSE OF THE ORGANIZATION

A. PAHO/WHO Country Offices and Centers

The PAHO/WHO Country Offices and the Caribbean Program Coordination have continued to be active in assisting Member Countries to address the cholera threat. During October and November 1991, the offices assisted countries to prepare national plans for the prevention and control of cholera, emphasizing emergency measures to be

implemented in the next two years. These plans were sent to international and bilateral agencies, along with subregional plans for the Caribbean, Central American and Andean countries. An International Conference on the Cholera Crisis was then hosted in Washington, D.C., on 9 and 10 December to sensitize these agencies to the needs of the countries and solicit their financial support (see below).

In those countries affected by cholera, PAHO/WHO Offices have continued to provide technical cooperation in various aspects of cholera control and assist in securing additional resources.

The Caribbean Epidemiology Center (CAREC), the Institute of Nutrition of Central America and Panama (INCAP) and the Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS) have worked subregionally and regionally and in their areas of technical expertise to develop and promote appropriate methods in surveillance, laboratory investigation, water quality and sanitation and case management. These activities have been closely integrated with those of the PAHO/WHO Offices and regional programs.

B. Control of Diarrheal Diseases

The Program for the Control of Diarrheal Diseases (CDD) has sponsored workshops with teaching staff of schools of medicine and nursing to review training materials on preventive and therapeutic aspects of diarrhea and cholera in several countries. Clinical training courses for diarrhea and cholera case management have been held in a large number of locations for various health professionals providing adult and pediatric care. Surveys to assess quality of care for patients with cholera and other diarrheal diseases have been conducted, as have surveys of homes and health establishments. Documents on cholera control and treatment prepared by the WHO Global Cholera Task Force were translated into Spanish and widely distributed. Visits to several countries have been scheduled for a WHO/UNICEF advisor to strengthen local production and quality control of oral rehydration salts (ORS) and review logistics for obtaining, storing, distributing and using ORS.

From 1 to 6 June, 1992, a meeting of National CDD Programs of 19 Latin American countries was held in Bolivia to review and strengthen diarrheal disease and cholera control activities. PAHO, WHO, USAID and UNICEF sponsored and participated in the meeting.

C. Surveillance and Field Investigations

The Organization continues to place emphasis on the complete and regular surveillance and reporting of all clinically diagnosed cases of cholera, along with

appropriate field investigations to identify risk factors and modes of transmission and select specific interventions. The Health Situation and Trend Assessment Program (HST) prepares and distributes a monthly update on the cholera situation in the region and provides technical cooperation on epidemiological aspects of cholera.

The HST program coordinates the execution of the project funded by the Interamerican Development Bank (IDB). One component of this project is the improvement of surveillance and investigation through courses, workshops and seminars and the provision of international and national consultants. (Other components of the project are environmental health, laboratory strengthening and food safety.)

D. Laboratory

Jointly with the Centers for Disease Control, the Health Services Development Program (HSD) is completing a standard manual for laboratory diagnosis of V. cholerae. A workshop to initiate development of the manual was held in Venezuela in October 1991, and a workshop in CAREC in April 1992 tested the English version of the manual. A final review of the manual is scheduled for July, after which a regional meeting using the Spanish version will be held.

HSD is responsible for the laboratory component of the IDB-funded project, which is intended to develop national laboratory competency, assist in the development of a national laboratory network in each country, and train national laboratory personnel. Activities done through this project are closely linked with those described above.

HSD continues to assist Member Countries to obtain laboratory supplies and materials. In addition, the program has prepared a protocol for the field trials of simple, rapid tests for the diagnosis of cholera which will be carried out in several countries.

E. Environmental Health

The Environmental Health Program (HPE) has actively promoted the improvement of water quality in municipalities, smaller communities and households, primarily by fostering the development and implementation of practical measures for disinfection. This has included the purchase and distribution of on-site hypochlorite generators as well as equipment for surveillance and control of water quality. The program has also promoted projects for household water containers that prevent contamination of disinfected water and for preparation of environmental health risk maps for cholera.

HPE is responsible for a significant component of the IDB-PAHO cholera project and has organized and held a regional seminar, jointly with the Veterinary Public Health Program, to update environmental health knowledge and to upgrade laboratory capability for environmental health and food protection. The program is also assisting Member Countries to plan and conduct national activities for training in laboratory analysis and monitoring of water quality and food safety and the development of audiovisual and printed educational materials.

HPE is promoting national programs for safe excreta disposal and special programs for safe disposal of waste from hospitals, clinics, schools and other institutions which could become foci of infection.

F. Food Safety

The Veterinary Public Health Program (HPV) is implementing seminars as part of the IDB-PAHO cholera project to assure national laboratory capability for food analysis, surveillance systems for foodborne diseases, food inspection systems and educational programs for consumer protection. HPV is also exploring approaches to reduce risks of disease transmission by street food vendors. HPV has developed and distributed a basic document regarding "Risk of Transmission of Cholera by Foods." The Organization remains concerned about import restrictions placed on commercial foodstuffs produced in cholera-affected countries and has informed national authorities about the adverse impact and ineffectiveness of such measures. Many countries have responded positively to this expression of concern.

HPV has developed and conducted two international courses on microbiological analysis of V. cholerae in foods and two additional courses are planned. A consultative meeting on food safety was held with the sponsorship and participation of several international agencies, and a regional seminar for airline caterers and food protection officials was held to promote safety of catered airline foods. HPV continues to provide technical cooperation to strengthen food protection and train laboratory personnel and promotes studies of cholera contamination of common foods.

G. Information and Social Communication

The Office of Information and Public Affairs (DPI) has continued to provide information and materials about cholera to the media. Since October 1991, DPI has also been executing a social communication project funded with $2.1 million by the Government of the Netherlands. The project has three components: (1) A series of seminars will inform journalists about various aspects of cholera and strengthen PAHO's links with the media in Latin America and the Caribbean; one seminar was held in

May 1992. (2) A clearinghouse of social communication materials is being established so that they may be actively shared throughout the region. (3) Selected social communication projects will be funded in Latin America and the Caribbean; 91 projects submitted by the countries are being reviewed.

H. Emergency Preparedness and Disaster Relief

The Office of Emergency Preparedness and Disaster Relief (PED) has continued to work with affected countries to meet emergency needs. For example, PED worked with HPE to provide chlorine to Peru and Ecuador. PED has also worked closely with the PAHO/WHO Office in Haiti and various technical units to prepare a contingency plan for cholera in Haiti, considering that country to be at high risk and that a large epidemic would have devastating consequences. The plan deals with preparatory and early epidemic phases and has the following components: training in clinical management, surveillance and reporting, emergency supplies, water and sanitation measures, and health information and education. A number of bilateral and multilateral agencies and non-governmental organizations have expressed interest in funding and participating in the project.

I. Vaccines

PAHO has sponsored a phase II trial of the inactivated oral whole-cell/B-subunit cholera vaccine in Barranquilla, Colombia. Field operations were completed in February 1992, and serological tests and analysis are being completed. The results will be reviewed to prepare for a phase III trial planned for August. A protocol for the phase III trial has been prepared and submitted to external reviewers. A phase II trial of the same vaccine is being initiated in Mexico, but another trial planned for Brazil is being delayed pending analysis of the data from Colombia.

The Office of Research Coordination (DRC), which is the PAHO program responsible for the trials, also maintains contact with other institutions studying the whole-cell/B-subunit vaccine and the oral, attenuated CVD 103 HgR vaccine. Results of other trials involving these vaccines will become available in the second half of 1992, and it is anticipated that findings will be widely shared and used to plan for phase III trials.

J. Resource Mobilization

The Organization has mobilized over $21 million for cholera intervention and control activities since January 1991, with nearly $9 million having been mobilized since the report to the Directing Council in September 1991. Sources of funding have been

the Governments of the Netherlands, Italy, Sweden, the United Kingdom and the United States, the Inter American Development Bank (IDB), the European Community, the Food and Agricultural Organization and the OPEC fund. Negotiations are underway for an additional $4 million. Nearly $9 million of the total was mobilized as a result of the International Conference "The Cholera Crisis: A Challenge for Health and Development" held at PAHO in December, at which time an agreement for a $3.8 million project was signed by IDB and PAHO; this project is now being executed. The Office of External Relations Coordination, which has played a major role in mobilizing these funds, continues to look for additional resources in the international community.

In cholera documents presented to the Executive Committee (CE107/25) and the Directing Council (CD35/20) in 1991, the Organization has indicated the need to make long-term investments in infrastructure to control and prevent cholera and other diarrheal diseases, in addition to the emergency measures being undertaken by the Member Countries and the Organization which are intended to reduce the impact and extent of the epidemic. The long-term phase is addressed in the document "Regional Plan for Investment in Environment and Health" (CE109/27), to be considered by the Executive Committee under item 7.2.

IV. CONCLUSION

Four new countries of of the Region have been affected by cholera in 1992, and 10 of the 15 countries affected in 1991 have already reported more cases in 1992. While overall case rates have decreased in the Region in recent weeks, the reappearance of epidemics in previously infected areas during the first three months of this year underscores the continuing threat that cholera poses. Only two countries of Latin America outside of the Caribbean (Paraguay and Uruguay) have not reported cases this year.

All countries have implemented measures to reduce the risk of dissemination of cholera based upon national control and prevention plans. Many have indicated that the incidence of other diarrheal diseases has decreased as a result of these measures. In addition, the field investigations suggest that measures have been effective in limiting the extent and duration of epidemics. Clearly, death-to-case ratios remain low, though differences within and between countries indicate that case management and access to care need improvement in some locations.

Because cholera continues to be present in the Region, constant vigilance and efforts to control its spread and impact are required. Acceptance of and complacency about cholera must not be allowed to develop. The Organization is committed to helping Member Countries secure additional technical and financial resourses to combat cholera in order to supplement national resources that the countries must continue to invest.

Annex

Date: 16 June 1992

From: A.D. Brandling-Bennett, PC, HST

Subject: **CHOLERA SITUATION IN THE AMERICAS**

Update number 12

1992

- ECUADOR

Last week and cumulative number of cholera cases, hospitalizations, and deaths by Region/Province, Ecuador, through 04/25/1992

Region/ Province	Week 17			Cumulative		
	Cases	Hospit.	Deaths	Cases	Hospit.	Deaths
Costa	144	114	1	16404	14897	79
-El oro	0	0	0	3582	3113	17
-Esmeraldas	35	33	0	598	524	1
-Guayas	0	0	0	9192	8331	42
-Los Rios	53	52	1	1595	1580	11
-Manabi	56	29	0	1437	1349	8
Oriental	7	7	0	88	87	0
-Morona	0	0	0	0	0	0
-Napo	0	0	0	52	52	0
-Pastaza	7	7	0	31	30	0
-Sucumbios	0	0	0	5	5	0
-Zamora	0	0	0	0	0	0
Sierra	242	238	0	7402	6504	77
-Azuay	34	34	0	409	405	13
-Bolivar	3	3	0	130	130	0
-Canar	17	17	0	283	275	3
-Carchi	1	1	0	49	44	5
-Chimborazo	0	0	0	1033	645	22
-Cotopaxi	46	46	0	1135	1135	20
-Imbabura	27	27	0	1115	940	4
-Loja	0	0	0	158	150	6
-Pichincha	73	69	0	2256	1948	2
-Tungurahua	41	41	0	834	832	2
TOTAL	393	359	1	23894	21488	156

Source: Ministry of Health.

- EL SALVADOR

Last week and cumulative number of cholera cases, hospitalizations, and deaths by Region/Department, El Salvador through 06/06/1992

Region/ Departament	Week 23			Cumulative		
	Cases	Hospit.	Deaths	Cases	Hospit.	Deaths
Central	112	32	0	612	248	0
-Chalatenango	112	32	0	239	61	0
-La Libertad	0	0	0	373	187	0
Metropolitana	86	53	0	1824	1314	14
-San Salvador	86	53	0	1824	1314	14
Occidental	119	11	0	119	11	0
-Ahuachapán	1	0	0	28	12	0
-Santa Ana	96	11	0	174	43	0
-Sonsonate	23	0	0	101	37	1
Oriental	178	45	0	399	132	0
-La Unión	0	0	0	19	5	2
-Morazán	1	0	0	3	0	0
-San Miguel	9	0	0	41	14	0
-Usulutlán	168	0	0	336	113	1
Paracentral	144	59	0	784	328	0
-Cabanas	0	0	0	16	6	0
-Cuscatlán	0	0	0	29	21	0
-La Paz	144	59	0	551	247	3
-San Vicente	0	0	0	188	54	0
TOTAL	640	200	0	3922	2114	23

Source: Ministry of Health.

- FRENCH GUYANA

One cholera case, the tenth for 1992, was reported from French Guyana. he patient, a 55 years old male with no travel history, had the onset of diarrhea on 20 May 1992. The diagnosis was confirmed by culture.

- GUATEMALA

Last week and cumulative number of cholera cases, hospitalizations, and deaths by Department, Guatemala, through 05/30/1992

Department	Week 22			Cumulative		
	Cases	Hospit.	Deaths	Cases	Hospit.	Deaths
Alta Verapaz	0	0	0	63	11	1
Baja Verapaz	0	0	0	8	6	0
Chimaltenango	0	0	0	42	38	0
Chiquimula	37	7	2	225	125	5
El Progreso	6	0	0	60	17	1
Escuintla	29	17	0	1363	870	7
Guatemala	126	115	0	1284	470	4
Huehuetenango	0	0	0	11	1	1
Izabal	0	0	0	81	22	10
Jalapa	0	0	0	2	0	0
Jutiapa	0	0	0	9	1	0
Petén	0	0	0	12	0	0
Quetzaltenango	4	2	0	86	57	0
Quiché	0	0	0	5	1	0
Retalhuleu	149	146	0	176	161	0
Sacatepéquez	0	0	0	1	1	0
San Marcos	0	0	0	47	25	1
Santa Rosa	13	13	0	34	27	1
Sololá	16	1	0	584	33	3
Suchitepéquez	107	60	2	1082	183	3
Totonicapán	0	0	0	3	0	0
Zacapa	9	0	0	198	102	2
TOTAL	496	361	4	5379	2151	39

Source: Ministry of Health.

- HONDURAS

Last week and cumulative number of Cholera cases, hospitalizations, and deaths by Department/Municipality, Honduras, through 05/30/1992

Department/ Municipality	Week 22			Cumulative		
	Cases	Hospit.	Deaths	Cases	Hospit.	Deaths
Choluteca	0	0	0	10	6	0
-Marcovia	0	0	0	10	6	0
Francisco Morazán	19	19	0	45	43	1
-Cedros	0	0	0	1	1	0
-Distrito Central	19	19	0	44	42	1
Lempira	0	0	0	1	1	0
-San Juan G.	0	0	0	1	1	0
Olancho	0	0	0	2	2	0
-Juticalpa	0	0	0	2	2	0
Valle	1	1	0	2	2	0
-Nacaome	1	1	0	2	2	0
TOTAL	20	20	0	60	54	1

Source: Ministry of Health.

- NICARAGUA

Last week and cumulative number of cholera cases, hospitalizations, and deaths by Department/Minicipality, Nicaragua, through 30 May 1992

Department/ Minicipality	Week 22			Cumulative		
	Cases	Hospit.	Deaths	Cases	Hospit.	Deaths
Boaco	0	0	0	2	0	0
-La Empanada	0	0	0	2	0	0
Carazo	0	0	0	7	4	0
-San Marcos	0	0	0	7	4	0
Chinandega	13	2	0	20	6	0
-El Viejo	10	0	0	10	0	0
-Mun. Chinandega	3	2	0	3	2	0
-Potosí	0	0	0	7	4	0
Chontales	6	3	0	33	11	1
-El Rama	0	0	0	4	1	1
-La Libertad	1	0	0	1	0	0
-San Lorenzo	4	3	0	23	10	0
-Santo Tomás	0	0	0	4	0	0
-Villa Sandino	1	0	0	1	0	0
Granada	0	0	0	33	9	1
-Nandaime	0	0	0	33	9	1
León	0	0	0	1	0	0
-La Paz Centro	0	0	0	1	0	0
Managua	9	4	0	52	23	2
-Ciudad Sandino	2	1	0	3	2	0
-Madera	0	0	0	2	0	2
-Managua	0	0	0	1	0	0
-San Benito	0	0	0	1	1	0
-Ticuantepe	0	0	0	1	0	0
-Tipitapa	0	0	0	8	5	0
-Tipitapa Urbano	0	0	0	29	12	0
-Urbano	7	3	0	7	3	0
Matagalpa	0	0	0	2	0	0
-Darío	0	0	0	2	0	0
TOTAL	28	9	0	150	53	4

Source: Ministry of Health.

- PANAMA

Last week and cumulative number of cholera cases, hospitalizations, and deaths by Province/Locality, Panama, through 05/23/1992

Province/ Locality	Week 21			Cumulative		
	Cases	Hospit.	Deaths	Cases	Hospit.	Deaths
Chepo						
-Canitas	0	0	0	2	2	0
-Chepo Cabecera	0	0	0	3	3	0
-El Llano	4	0	0	50	24	0
Chimán						
-Brujas	0	0	0	7	2	2
-Chimán	0	0	0	8	1	0
-Gonzalo Vásquez	0	0	0	47	6	1
Colón						
-Colón	0	0	0	30	1	0
-Cristobal	0	0	0	1	1	0
-Sabanitas	0	0	0	1	1	0
Comarca de San Blas						
-Alligandi	35	7	0	187	61	2
-Mulatupu	1	0	0	11	0	0
-Nargana	0	0	0	1	1	0
-Pto. Obaldía	2	2	0	10	8	0
Darién						
-Boca de chupe	0	0	0	12	10	0
-Chepigana	0	0	0	8	6	0
-Cirilo G.	0	0	0	4	4	0
-El Real	5	3	0	44	10	0
-Gamoganti	0	0	0	6	2	0
-Garachine	1	0	0	12	5	0
-Jaque	0	0	0	2	1	0
-Jingurudo	0	0	0	5	2	0
-La Palma	0	0	0	6	3	0
-Lajas Blancas	0	0	0	4	4	0
-Manuel Ortega	0	0	0	16	4	0
-Nuevo Belén	0	0	0	2	0	0
-Pinogana	1	0	0	28	7	0
-Pucuro	0	0	0	1	1	0
-Río Congo	0	0	0	1	1	0
-Río Sabalo	0	0	0	12	6	0
-Río Turquesa	0	0	0	1	1	1
-Sambu	0	0	0	39	2	0
-Tucuti	0	0	0	2	1	0

- PANAMA
  Cont.

Province/ Locality	Week 21			Cumulative		
	Cases	Hospit.	Deaths	Cases	Hospit.	Deaths
-Yape	0	0	0	2	1	0
-Yaviza	0	0	0	50	10	0
Metropolitana						
-Calidonia	0	0	0	2	2	0
-Curundú	0	0	0	1	1	0
-Tocumén	0	0	0	1	1	0
C. San Miguelito						
-A.D. Icaza	0	0	0	1		
TOTAL	49	12	0	610	197	8

Source: Ministry of Health.

- PERU

Last week and cumulative number of cholera cases,
hospitalizations, and deaths by Region,
Peru, through 05/05/1992

Region	Week 19			Cumulative		
	Cases	Hospit.	Deaths	Cases	Hospit.	Deaths
A.A. Cáceres	105	77	0	5532	3831	76
Arequipa	571	43	0	17439	3541	12
Callao	410	68	0	10298	3538	1
Chavín	50	30	0	3548	3181	53
Grau	154	117	1	3709	2263	16
Inka	20	0	4	1588	263	10
J.C. Mariátegui	19	19	0	1902	1238	21
La Libertad	159	111	0	10788	6564	55
Lib. Wari	84	57	0	5328	3997	84
Lima	1589	564	4	68952	28445	106
Loreto	0	0	0	2124	1552	6
N.O. Marañón	388	310	5	8452	6047	69
San Martín	128	7	0	2116	394	1
Ucayali	9	3	0	477	241	9
TOTAL	3686	1406	14	142253	65095	519

Source: Ministry of Health.

- VENEZUELA

Last week and cumulative number of cholera cases, hospitalizations, and deaths by States, Venezuela, through 05/30/1992

States	Week 22			Cumulative		
	Cases	Hospit.	Deaths	Cases	Hospit.	Deaths
Apure	0	0	0	4	2	1
Aragua	1	0	0	103	29	1
Carabobo	0	0	0	11	11	0
Dto. Federal	0	0	0	59	38	0
Miranda	0	0	0	19	18	2
Táchira	0	0	0	6	6	0
Zulia	13	11	0	667	603	12
TOTAL	14	11	0	869	707	16

Source: Ministry of Health.

- UNITED STATES

Two additional cholera cases have been reported among residents of Los Angeles county, California. The first one, a 78 years old male, had recently traveled to Vietnam, and the second, a 53 years old male, had returned from El Salvador. The cumulative total number of cholera cases reported by the United States is 84 for 1992.

- No new cases were reported from Belize and Chile and no updated report has been received from Bolivia, Brazil, Colombia or Suriname.

CHOLERA CASES IN THE AMERICAS

1991-1992

COUNTRY	FIRST REPORT	CUMULATIVE CASES		1992	
		1991	1992[a]	hospit.	deaths
PERU	01/23/91	322,562	142,253	65,095	519
ECUADOR	03/01/91	46,320	23,894	21,488	156
COLOMBIA	03/10/91	11,979	2,158	794	23
USA	04/09/91	26	84[b]	...	1
BRAZIL	04/08/91	1,567	6,875	5,353	121
CHILE	04/12/91	41	69	31	1
MEXICO	06/13/91	2,690	1,574	592	13
GUATEMALA	07/24/91	3,674	5,379	2,151	39
EL SALVADOR	08/19/91	947	3,922	2,114	23
BOLIVIA	08/26/91	206	15,385	7,229	320
PANAMA	09/10/91	1,177	603	184	8
HONDURAS	10/13/91	11	67	62	1
NICARAGUA	11/12/91	1	151	57	2
VENEZUELA	11/29/91	13	869[c]	707	16
FRENCH GUY.	12/14/91	1[e]	10[e]	3	0
COSTA RICA	01/03/92	0	8[d]	5	0
BELIZE	01/09/92	0	3	3	0
ARGENTINA	02/05/92	0	284	61	15
SURINAME	03/06/92	0	12	...	1
TOTAL		391,214	203,600	105,929	1,259

... Data not received

a) as of VI/17/92

b) 75 cases in passengers on a flight from B. Aires to Los Angeles

c) 5 imported

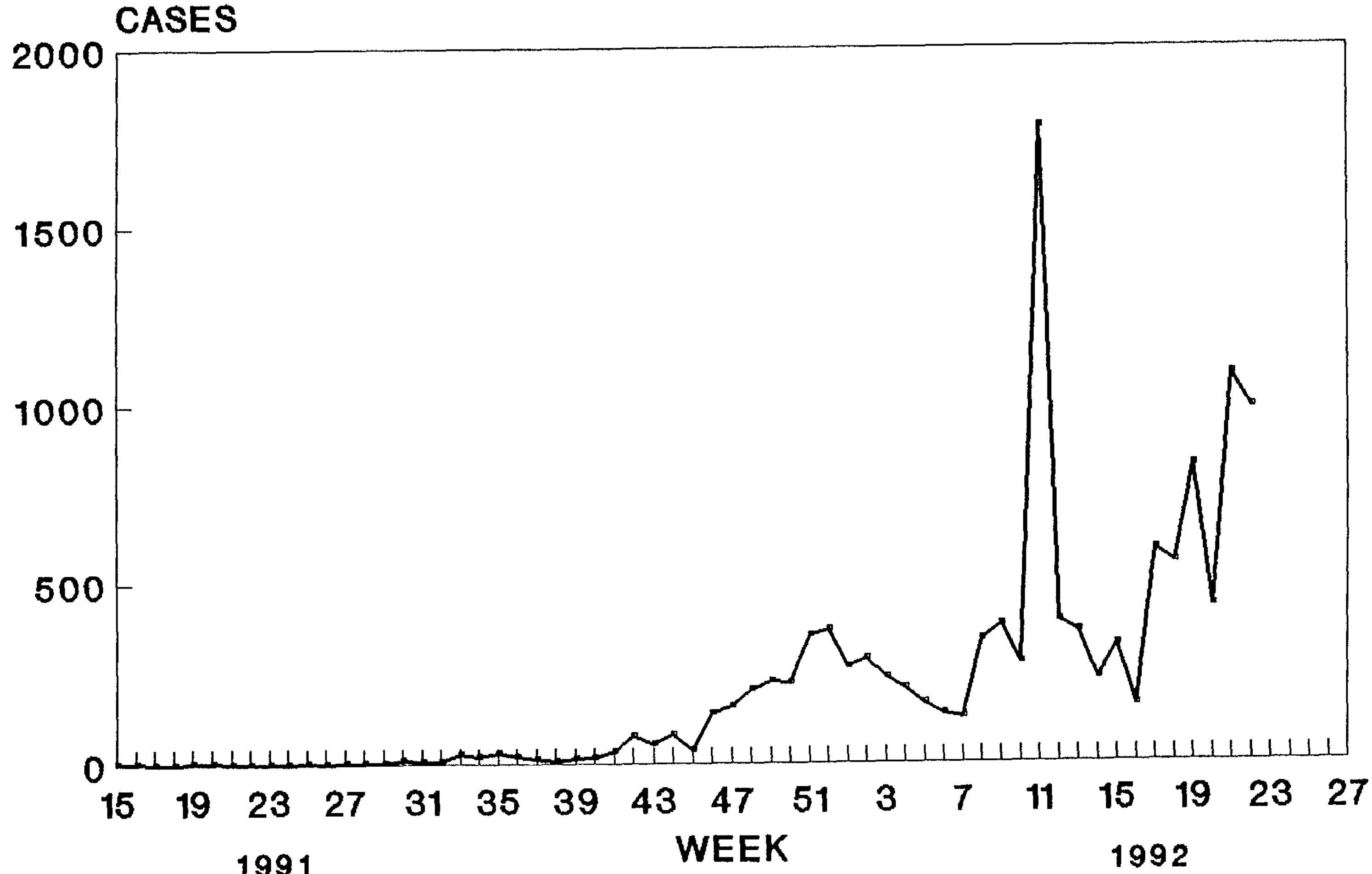
d) 1 autochthonous case (9 asymptomatic infected individuals identified)

e) 5 imported

HST VI/17/92

CHOLERA CASES REPORTED BY WEEK

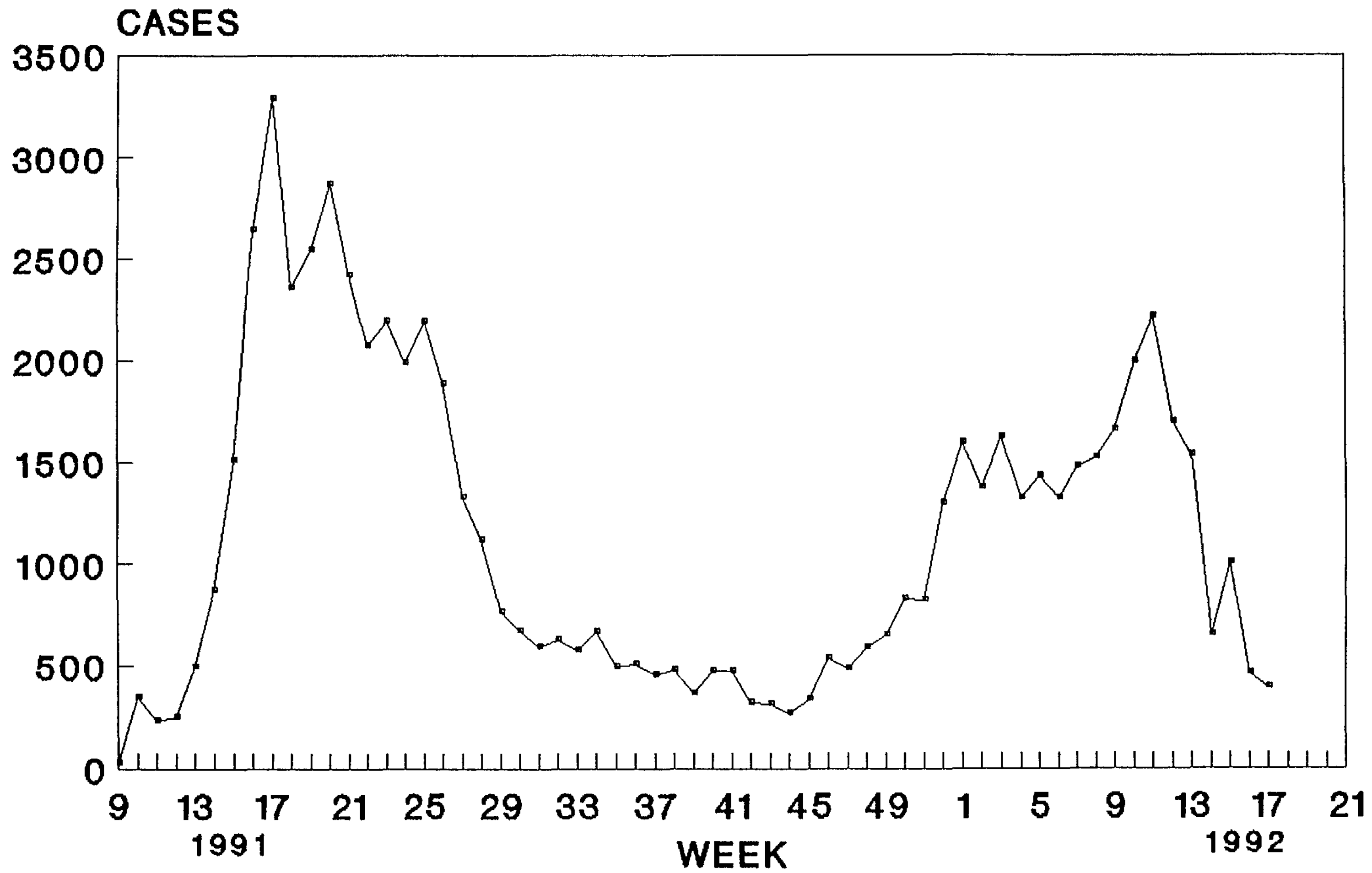
BRASIL, 1991-1992



Source: Ministry of Health

HST

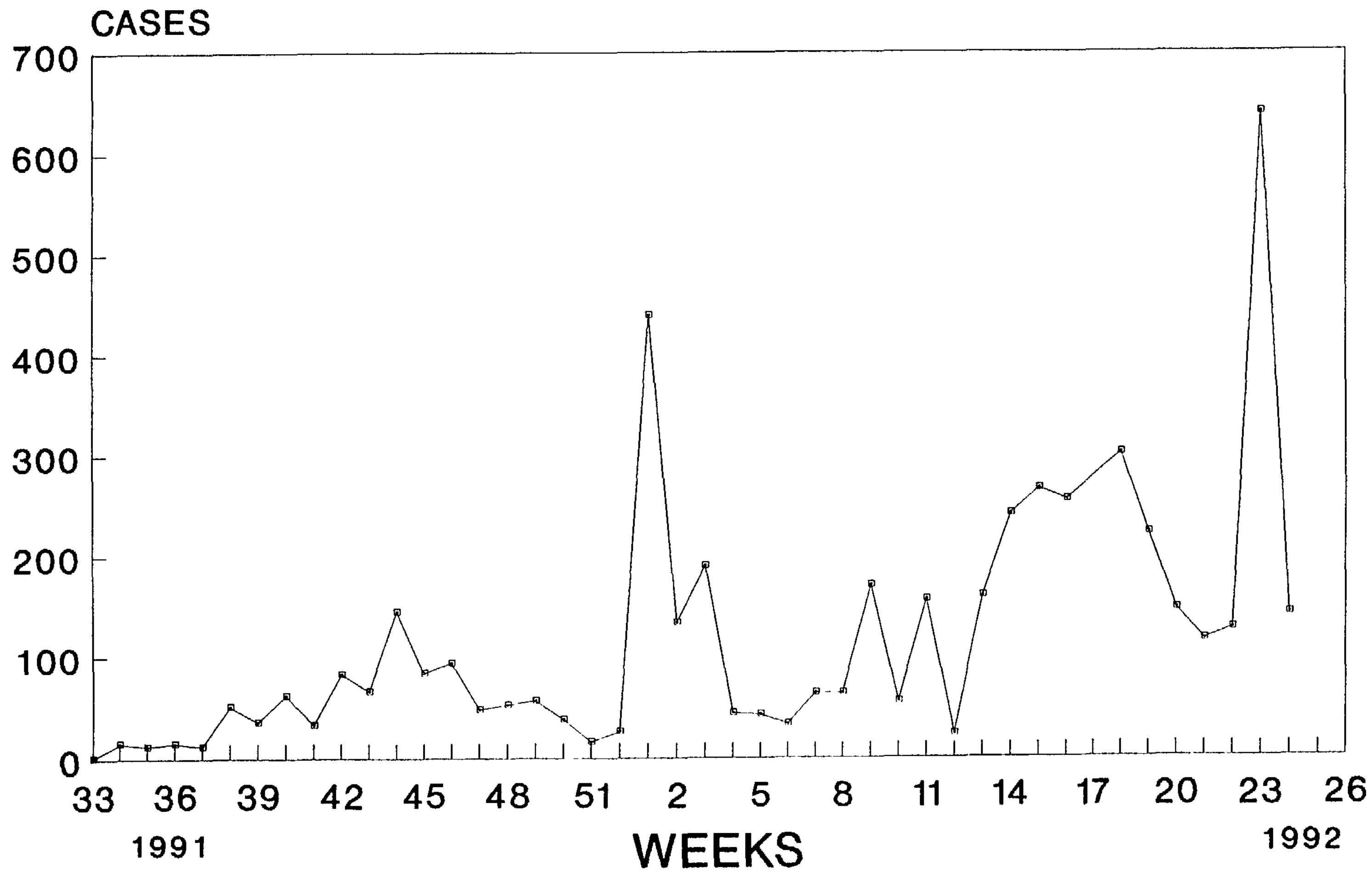
CHOLERA CASES REPORTED BY WEEK
ECUADOR, 1991-1992



Source: Ministry of Health

HST

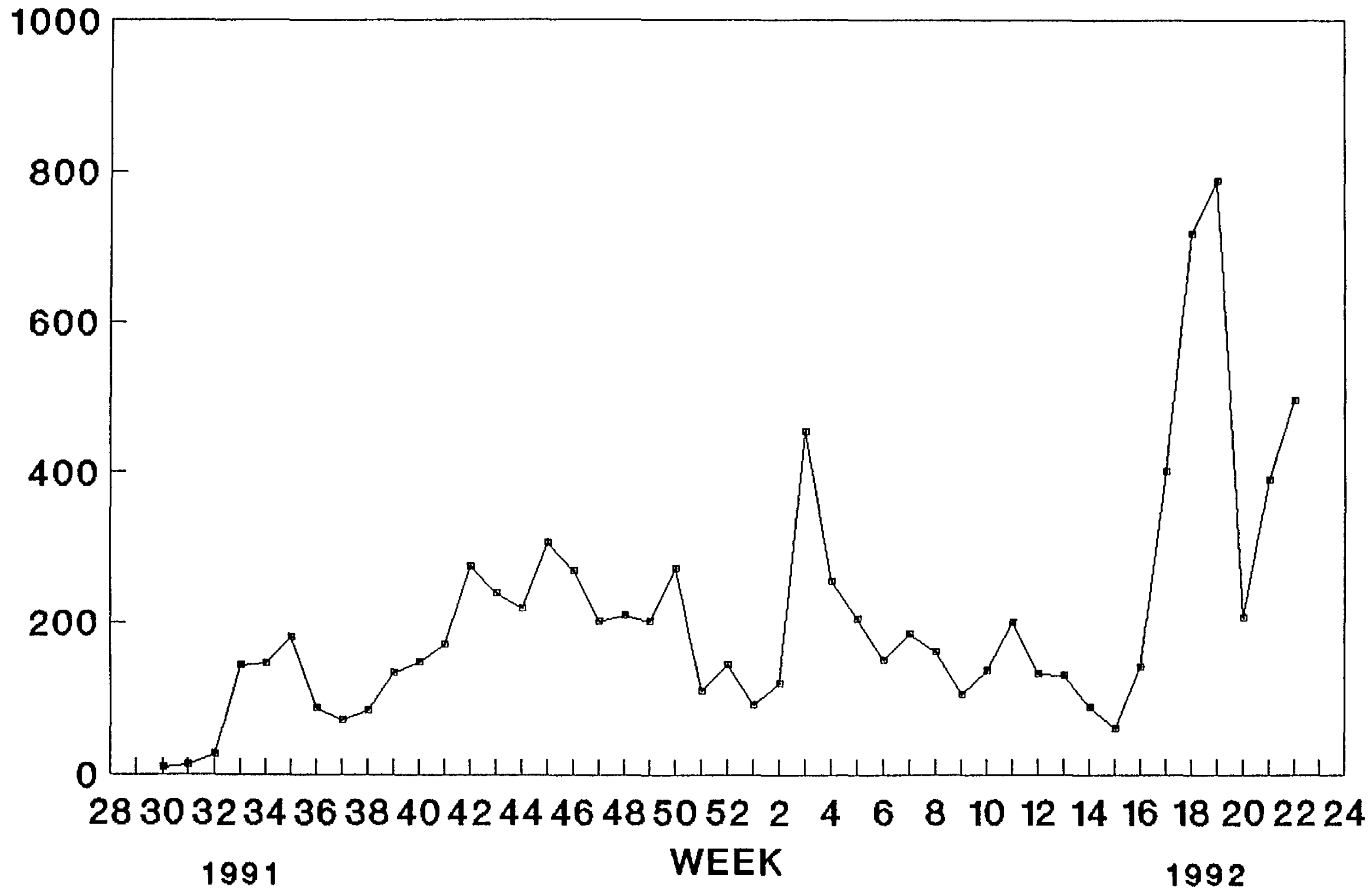
COLERA CASES REPORTED BY WEEK
EL SALVADOR, 1991-1992



Source: Ministry of Health

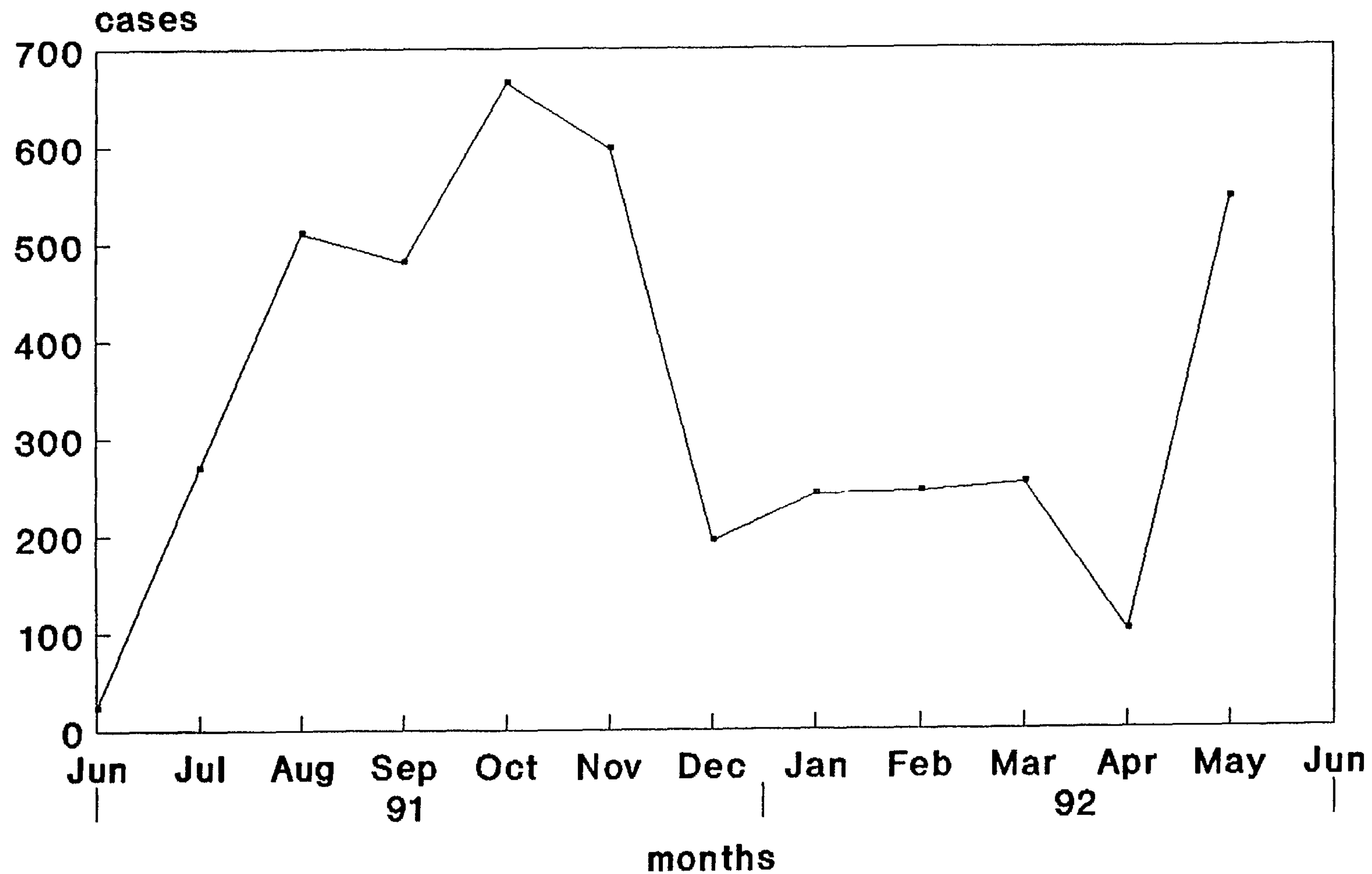
HST

CHOLERA CASES REPORTED BY WEEK
GUATEMALA, 1991-1992



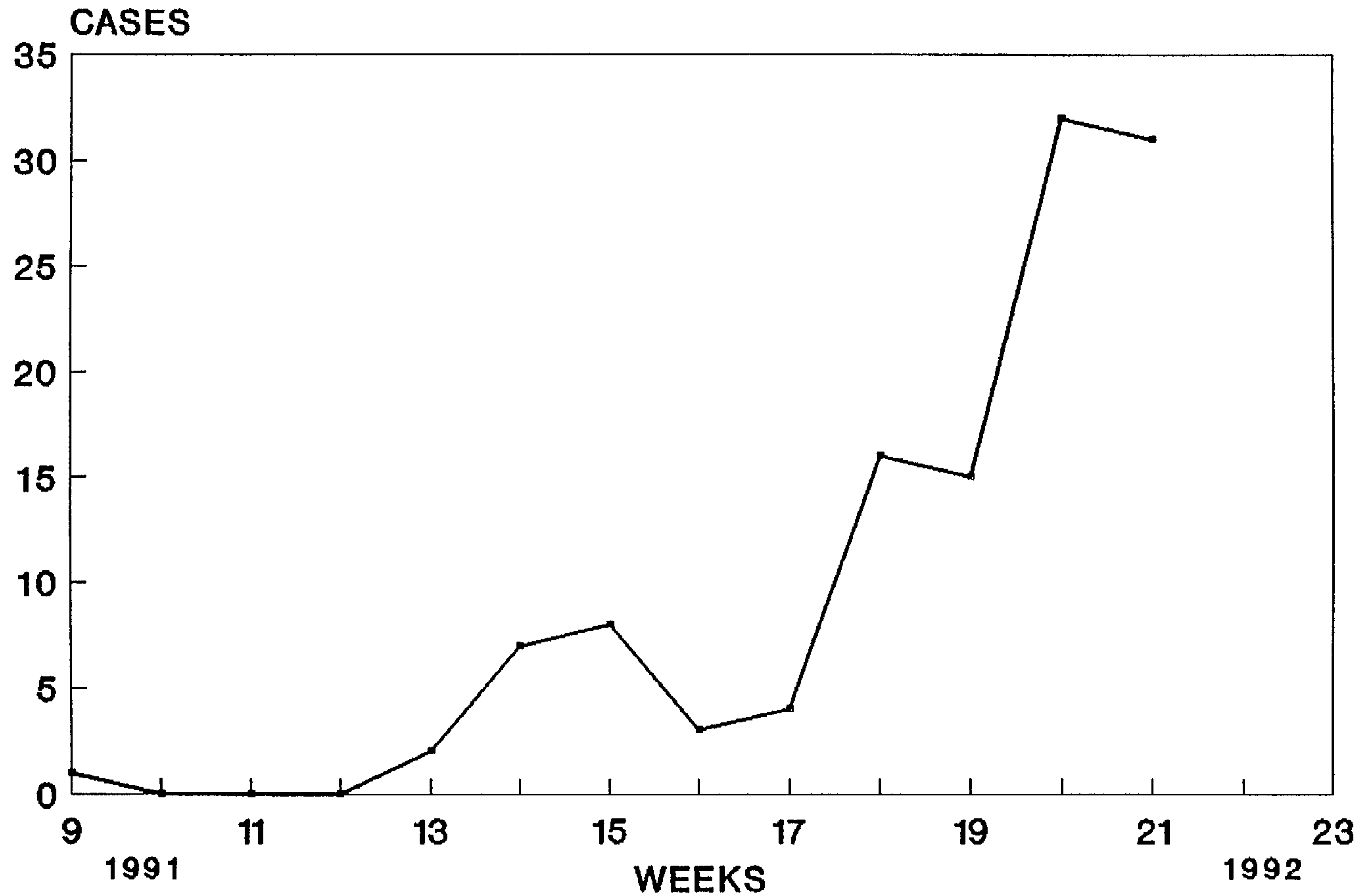
Source: Ministry of Health

HST


COLERA CASES REPORTED BY MONTH
MEXICO 1991-1992
cases
700
600
500
400
300
200
100
0
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
91
92
months
Source: Secretariat of Health
HST

CHOLERA CASES REPORTED BY WEEK

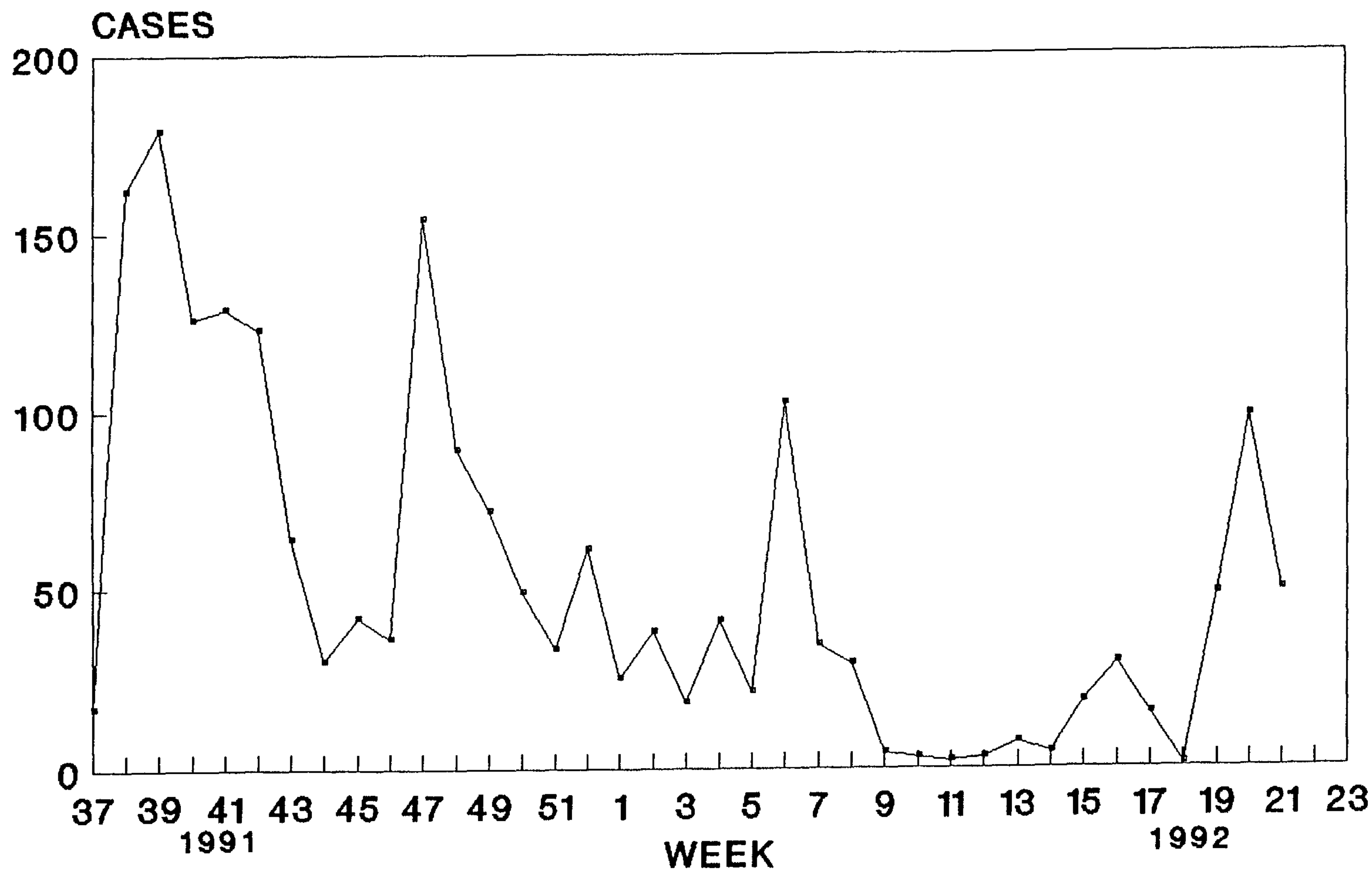
NICARAGUA, 1992



Source: Ministry of Health

HST

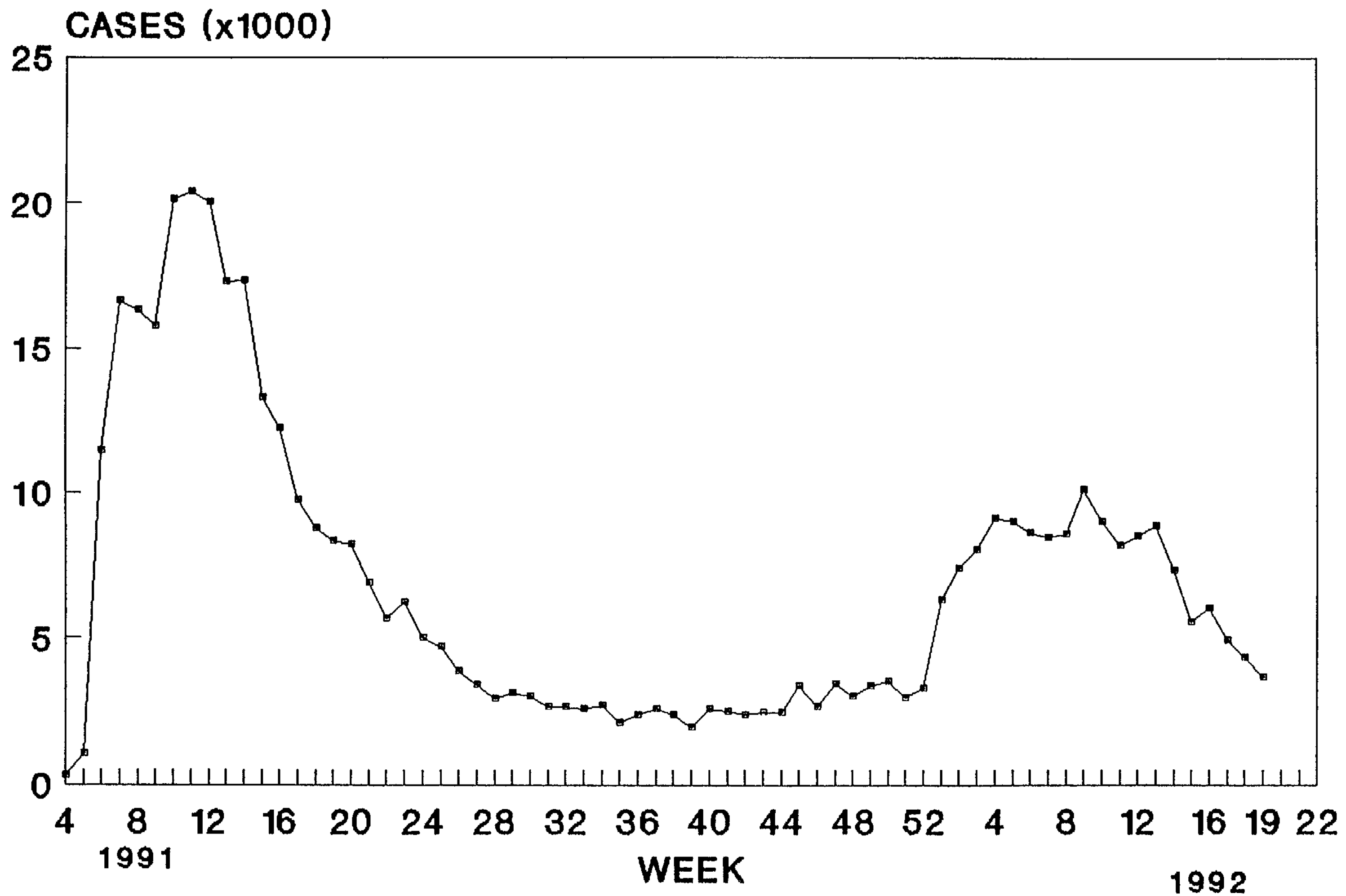
CHOLERA CASES REPORTED BY WEEK
PANAMA 1991-1992



Source Ministry of Health

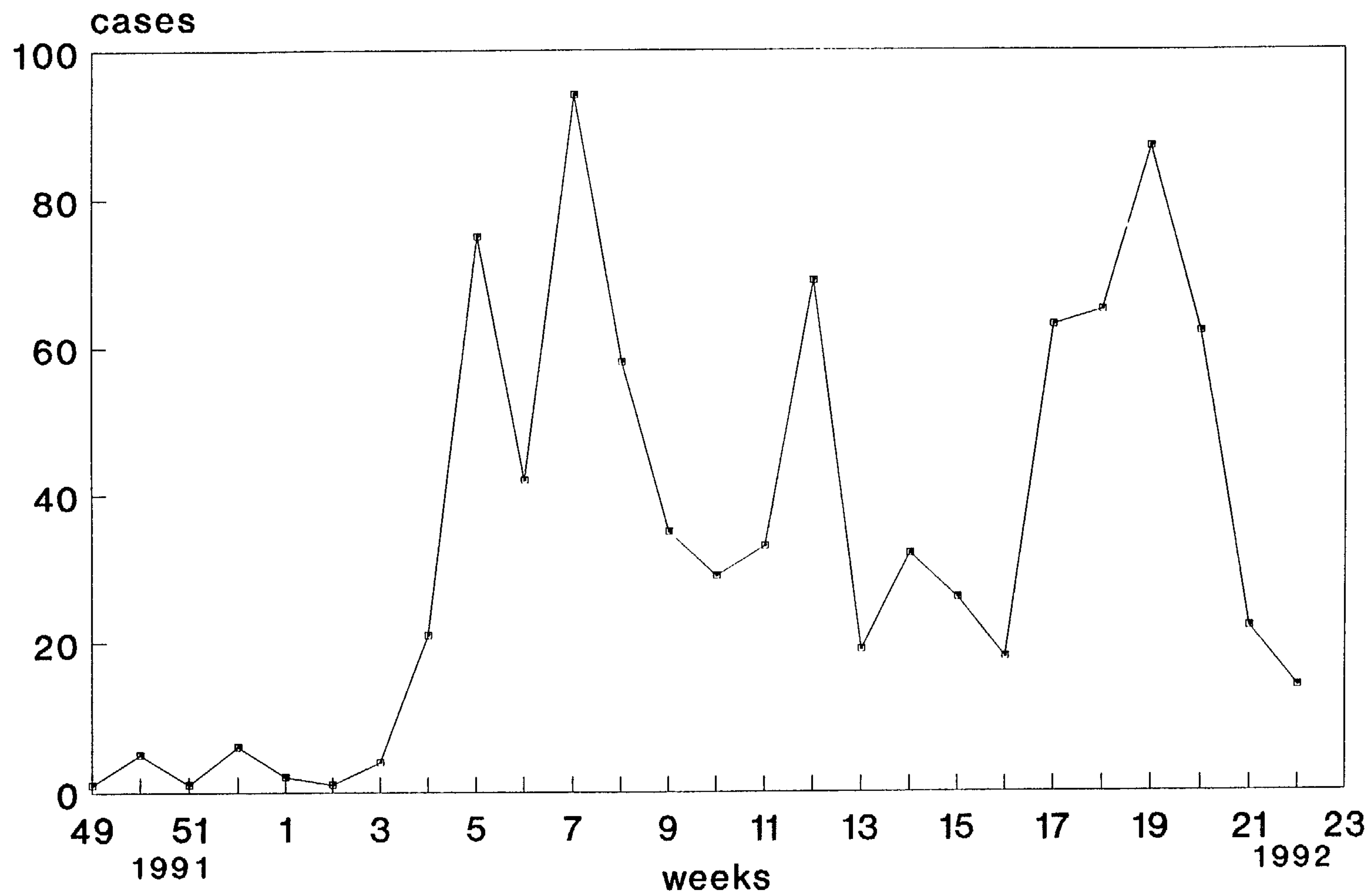
HST

CHOLERA CASES REPORTED BY WEEK
PERU 1991-1992



Source: Ministry of Health

HST


CHOLERA CASES REPORTED BY WEEK
VENEZUELA 1991-1992
cases
100
80
60
40
20
0
49
51
1
3
5
7
9
11
13
15
17
19
21
23
1991
1992
weeks
Source: Ministry of Health
HST