SEE ADD. 1

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ORGANISATION MONDIALE DE LA SANTE

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EXECUTIVE BOARD

Eighty-ninth Session

Provisional agenda item 8

CHOLERA

(Implementation of resolution WHA44.6)

Report by the Director-General

In resolution WHA44.6, the Forty-fourth World Health Assembly (May 1991) appealed to Member States and the Director-General to respond to the cholera epidemic in ways that were appropriate to control the extent and severity of the health and socioeconomic problems it was creating in affected countries.

As requested by the Health Assembly, the Director-General reports in the present document on action taken to implement resolution WHA44.6.

CONTENTS

I. BACKGROUND

A. Global cholera situation

1. In 1990, 71 000 cases of cholera were reported to WHO. Eleven countries in Africa and 12 countries in Asia accounted for 99% of these cases. However, in May 1991, when the global cholera situation was reviewed by the Forty-fourth World Health Assembly, epidemics were spreading across Latin America for the first time in this century. Since the beginning of 1991 (as at 7 November 1991), 458 492 cases causing over 15 156 deaths have been reported to WHO, more than in the previous five years combined.

2. In January 1991, cholera broke out in the coastal departments of Peru, spreading rapidly to all departments of the country and to the neighbouring countries of Ecuador and Colombia. It was to become the world's single largest cholera epidemic this century, causing 269 070 cases in Peru and spreading progressively to 10 other Latin American countries. Brazil and Chile appear to have successfully controlled the initial introduction of cholera and experienced relatively few cases up to now. In contrast, the epidemic is not yet fully controlled in Peru or in Ecuador, and it continues to affect new areas. It is likely that cholera will spread further to other areas of the Americas with dense populations, poverty, and unsatisfactory environmental conditions. In contrast with its intensity, the epidemic in Latin America has caused relatively few deaths (3402); the resulting case fatality rate has been only 1.0%, much lower than in many earlier epidemics in Asia and Africa.

3. In Africa, 125 271 cases and 11 602 deaths have been reported so far in 1991, more than in any year since 1970, when that continent was affected by the disease for the first time this century. The overall case fatality rate of cholera in Africa (10.2%) is 10 times higher than in the Americas. Chad is the seat of a particularly intense epidemic which has caused 13 409 cases since May. The largest epidemic has been reported by Nigeria, where 48 200 cases and 6354 deaths have been reported; this represents a case fatality rate of more than 13%. At the beginning of the year, Zambia reported an intense outbreak during which 1.3 per 1000 of the population were affected in a few months.

4. Developed countries are not fully protected from the occurrence of cholera. The United States has reported more cases of cholera this year (22 imported cases) than in any year this century. Japan has reported 70 cases, and five European countries have reported a total of 300 cases in 1991.

B. Issues and tasks identified in resolution WHA44.6

5. The Health Assembly recognized in resolution WHA44.6 that the spread of cholera is a consequence of poverty, the lack of an adequate supply of potable water, and deficient sanitary and other environmental conditions. Long-term efforts to control cholera must address these issues in development policies and plans at national and international levels; and significant financial support from international and regional institutions will be needed in order to implement environmental and health projects associated with the control of cholera and other diarrhoeal diseases.

6. Cholera further aggravates health and socioeconomic problems in affected and threatened countries. Therefore, concrete measures must be taken to limit its spread, and to prevent mortality and reduce morbidity from the disease. Urgent action continues to be required to reinforce the efforts of countries to improve epidemic surveillance and health services, provide potable water and proper sanitation, and promote safe food handling practices and personal hygiene.

7. In countries yet untouched by the epidemic, action needs to be taken to strengthen their capabilities for epidemiological surveillance, maintenance of clean drinking-water, disease prevention through public information, and correct management of cases.

8. To control the social and economic effects of cholera, the Health Assembly called on Member States not to apply restrictions that cannot be justified on public health grounds, in particular as regards importation of products from the affected countries.

9. The cholera epidemic has provided many opportunities for the Organization to work closely with the governments and health officials of Member States. Their efforts to prepare for and to respond appropriately

to epidemic conditions, and their cooperation with regional and international communities in doing so, are recognized and appreciated.

10. The Organization has divided its response to the epidemic into (a) providing emergency assistance, (b) developing preparedness in countries largely through strengthening of national diarrhoeal disease control programmes, (c) enhancing information exchange, including dissemination of information to the public, and (d) mobilizing resources for long-term investments in improving water supplies, sanitation, and the health infrastructure.

II. CURRENT STATUS OF CHOLERA CONTROL ACTIVITIES

A. Objectives and strategy of the Global Task Force on Cholera Control

11. The Global Task Force on Cholera Control was set up by the Director-General on 24 April 1991 to coordinate the Organization's global action in relation to cholera control, in cooperation with the regional offices.

12. The Task Force members include representatives from the Programme for the Control of Diarrhoeal Diseases (CDD), Community Water Supply and Sanitation (CWS), Drugs and Biological Procurement (DBP), the Office of External Coordination (ECO), Food Safety (FOS), the Division of Health Education (HED), the Office of Information (INF), Microbiology and Immunology Support Services (MIM), the Relief Programme (REL), and Strengthening of Epidemiological and Statistical Services (SES). A representative of UNICEF also regularly meets with the Task Force.

13. The objectives of the Task Force are to reduce mortality and morbidity associated with cholera, and to reduce the social and economic consequences of cholera. The efforts to achieve these objectives fall within six principal components of the Task Force's plan of action:

(1) Intensify cooperation in national cholera control activities;

(2) Enhance information exchange;

(3) Review and revise policy;

(4) Intensify research efforts;

(5) Mobilize financial resources;

(6) Activate a global technical resource network.

B. Action taken by the Global Task Force on Cholera Control and regional offices

14. Examples of activities completed this year in each of the areas mentioned in paragraph 13 are described briefly here. The many longer-term activities of the participating programmes which contribute to cholera control are not included in this summary.

Intensify cooperation in national cholera control activities

15. The Organization has cooperated with more than 110 countries in developing national diarrhoeal disease control programmes. When health workers are trained in the treatment of acute diarrhoeal diseases and treatment supplies are available, countries are able to respond more efficiently and effectively to cholera outbreaks. During the epidemic, efforts to reinforce national programmes in affected and threatened countries were intensified.

16. A similar increased focus on affected countries was provided through activities in the areas of strengthening epidemiological and laboratory services, health education, water safety and sanitation, and food safety.

17. Intercountry and country meetings were conducted to coordinate control activities in order to achieve the most efficient use of technical and financial resources, and to assist countries to be prepared for outbreaks. These included a meeting on cholera prevention and control measures with representatives from ministries of health in the African Region's Sub-Region III with Zaire (held in Zambia); a similar meeting is planned for Sub-Regions I and II in January (in Benin). An intercountry meeting on cholera control was also held with representatives from neighbouring areas of Chad and Cameroon (in Chad). Heads of cholera control commissions in 17 Latin American countries took part in a seminar (in Washington) in order to review their prevention and control measures and to prepare comprehensive national plans. Representatives of countries of Central America and Panama met in Costa Rica for a planning meeting, and a coordination meeting was held for English-speaking Caribbean countries. WHO also participated in a UNICEF-sponsored workshop on strengthening diarrhoeal disease control activities in Africa, with an emphasis on case definition and surveillance of cholera (in Kenya).

18. In addition, intercountry meetings of national diarrhoeal control programme managers held by the Regional Offices for the Americas, South-East Asia and the Eastern Mediterranean provided opportunities for government authorities to develop policies on case management and other control measures. Representatives of countries in the Eastern Mediterranean Region met to enhance interregional preparedness and develop national action plans for the implementation of control measures. At some of the meetings, plans for health education, training, and supply requirements were developed in order to prepare for a more rapid response to an outbreak in countries in the regions.

19. National cholera control commissions have been set up in all countries in Latin America, and each country has developed a cholera control plan. National commissions also exist in many countries of Africa.

20. Visits to countries to review the current epidemic situation, plan specific control measures, and identify financial resources were made to Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Peru, and Sudan. To ensure that countries can respond most effectively, national programmes received information to use in developing policy guidelines on case management and other control measures, and related training materials have been widely distributed. When needed, technical cooperation in implementing specific control measures has also been provided.

21. Intercountry courses for the training of trainers in the clinical management of acute diarrhoea, including cholera, were conducted in Honduras, India, Kenya, Malawi, Nigeria, and Zambia. The Organization has sponsored many clinical training courses for health workers, and has coordinated the funding of additional training with other international and bilateral agencies.

22. A strategy for emergency and longer-term interventions in water supply and sanitation in Latin America was developed which resulted in the preparation of a project proposal for the improvement of water quality surveillance in small villages and towns threatened by cholera. Emphasis has also been placed on intensified monitoring and improvement of water quality, and efforts are being made to improve human waste disposal in communities and hospitals.

23. To address a source of the spread of the disease in Peru, WHO participated in a national workshop on street food vending, and provided advice on food safety. A strategy for changing the food handling practices of street vendors has been developed.

24. To assess and stimulate additional local production of oral rehydration salts (ORS) to meet anticipated demands during an epidemic, technical cooperation was provided to Chile, Colombia, Dominican Republic, Ecuador, Guatemala, Mexico, Nigeria, and Peru.

25. Emergency supplies for treating cholera, such as ORS, intravenous fluids, and antibiotics, have been sent to Benin, Cameroon, Chad, Liberia, Mali, Niger, Nigeria, Togo, Peru, and the displaced Kurdish population in Turkey to enable these countries to respond more quickly. Also, arrangements for donations of doxycycline from pharmaceutical companies have been made for Bangladesh, Peru, and the Kurdish population in the Islamic Republic of Iran. Countries with the most threatened areas in the Eastern Mediterranean Region received emergency stocks of medical supplies.

26. In Iraq, a monitoring system for cholera and other diarrhoeal diseases was established as part of a system for monitoring health conditions.

27. Steps have been taken to reinforce country WHO teams in the African Region by taking steps to fill sanitation engineer and epidemiologist posts in countries at risk of cholera epidemics.

Enhance information exchange

28. Informing the public has been an important task in order to allay fear of cholera and ensure that the public understands and supports rational and effective control measures. To this end, the Organization has disseminated information on cholera widely through the world media. Multi-media campaigns have been organized involving the production and dissemination of press releases and features, and the setting up of press conferences and interviews with senior WHO staff and experts. Photographs and video film on cholera have been collected and distributed to various media, and a radio programme on cholera was produced and distributed to over 200 radio stations. Articles have also appeared in the WHO publication *Weekly Epidemiological Record*. Journalists have used this information, weekly updates of cholera data, and analyses of the situation as a basis for their reports, ensuring that data on the extent of the epidemic and WHO's recommendations appear widely in print and electronic media. Articles have also appeared in the more specialized press, including medical journals and newsletters of national and international nongovernmental organizations.

29. To meet the information needs of countries making preparations for cholera outbreaks, the document "Guidelines for cholera control" was revised and distributed in Spanish, English, Portuguese, and French. This document is now being further revised, based on experience with its use, and is being expanded as a WHO publication to include annexes on specific control measures. These guidelines and a summary on the appropriate case management of patients with cholera have been widely distributed in a cholera information kit to policy-makers, health personnel, nongovernmental organizations and the press, as well as to individuals requesting information. The guidelines were also adapted by the Regional Office for South-East Asia for use in Member States of the Region.

30. Government representatives have sought technical advice on critical questions about the control of cholera, especially measures taken by other countries trying to prevent the spread of cholera across their borders. To address the problems of the additional burdens of inappropriate travel and trade restrictions against affected countries, statements or fact sheets on policies and recommended control measures have been prepared and distributed to national authorities and the press. These include statements on the risks of cholera associated with international food trade; *cordon sanitaire*, quarantine, and frontier controls; and cholera vaccination and vaccination certificates. The statement on the risks of cholera associated with international food trade, for example, contributed to bilateral and international discussions that resulted in the lifting of some restrictions on food imports from Peru and other affected areas. However, a few countries continue to restrict imports from countries reporting cholera.

31. As a result of the rapid spread of the epidemic in new areas and the urgent need for information, efforts have been made to strengthen global and national systems for reporting cholera cases and deaths. An analysis of the notification process was completed, and recommendations for improving the timeliness of reports were issued. Countries have been encouraged to report cases in newly affected areas immediately and to provide weekly reports of cases and deaths. Increasing numbers are complying with the International Health Regulations in reporting cholera data.

32. Continuous assessments of the global cholera situation have been made, based on official and non-official reports received. Global cholera situation updates have been disseminated weekly to provide the latest information on cholera cases and deaths officially reported to WHO. In order to enhance these data with more complete and easier-to-use situational and trend reports, an updated cholera graphics file is regularly distributed to all regional offices.

33. Nongovernmental organizations, including the League of Red Cross and Red Crescent Societies, Médecins sans Frontières, and Vétérinaires sans Frontières, have sought and shared epidemiological information. This has contributed to a wider circulation of available information and a better understanding of

the global cholera situation among field organizations. Nongovernmental organizations have also sought technical guidance provided through WHO publications and participation in technical meetings.

34. To meet demands from the public for information, a leaflet entitled "A guide on safe food for travellers" (document WHO/FOS/91.1) was prepared and distributed in Arabic, English, French, German, and Spanish, and soon will be available in Russian.

35. A set of fact sheets is being prepared on the treatment of drinking-water and selected sanitary measures. These give the information needed to be able to provide safe water and improved sanitary systems at domestic, institutional, community, and municipal levels during a cholera emergency.

36. Sample health education messages have been developed to inform the public on ways to prevent cholera, on the need to seek immediate treatment when cholera is suspected, and on action to be taken to begin appropriate treatment. These are being adapted locally for use in affected areas. Since cholera outbreaks have been associated with contaminated food products, educational campaigns have sought to instruct people on how to prepare and handle foods. These campaigns also provide information to the public on how to make water safe for drinking.

37. Efforts have been made to improve the capability of laboratories to isolate and identify *Vibrio cholerae* 01. In Latin America, national staff have been trained, and subregional courses in laboratory procedures are being planned. Efforts have begun to strengthen a central reference laboratory in Ecuador. In conjunction with the United States Food and Drug Administration, courses on the detection of cholera vibrio in foods are being developed. In the Eastern Mediterranean Region, laboratory supplies, particularly culture media and antisera, have been provided to threatened countries.

Review and revise policy

38. Policies in relation to cholera, including those embodied in the International Health Regulations, have been reviewed, and no major revision of WHO recommendations appears to be necessary. However, a policy document summarizing all recommendations related to cholera is needed. It is being prepared for the use of countries in developing their policies on aspects of case management, vaccination and vaccination certificates, mass and selective chemoprophylaxis, water supplies and sanitation, food handling, tourism, *cordon sanitaire* and frontier controls, and international and domestic food trade.

Intensify research efforts

39. Vaccines currently available are not recommended as a public health measure to control cholera. Therefore, efforts to find an effective vaccine continue, and plans are progressing for trials of a killed whole-cell/B-subunit vaccine and a live-attenuated vaccine in Latin America; both are oral vaccines. In preparation for the trials, a seminar on cholera vaccine development and testing was held, a Programme for Vaccine Development (PVD) Task Force for Vaccines against Cholera and Other Bacterial Diarrhoeas met to set priorities for testing vaccines, meetings have been held with national authorities and investigators in countries proposed for the trials, and protocols for pre-trials and main efficacy trials have been developed. A donation has been received from the Swedish International Development Authority (SIDA) to purchase whole-cell/B-subunit vaccine for use in the trials. Possible sites for vaccine trials in Africa are under investigation.

40. In the light of the lack of evidence of the effectiveness of traditional injectable cholera vaccine, the few countries that still required cholera vaccination for travellers in 1990 have now lifted these requirements.

Mobilize financial resources

41. The current cholera epidemic demonstrates the need to address issues of poverty and development. The Director-General has therefore called upon international agencies and bilateral donors to make massive investments in water supplies, sanitation, and the health infrastructure of affected and threatened countries over the next decade. He has urged international development funding and loan institutions to expedite the processing and approval of proposals in these sectors. It has been estimated that over US$ 200 000 million is needed in Latin America alone, and even more will be required to ameliorate the conditions that favour the

spread of cholera in Africa and other regions of the world. Although affected countries will carry the major burden of these improvements, they will also depend on receiving large investments from the international community in order to achieve their goals.

42. In addition to this call for investments over the next decade, the Global Task Force on Cholera Control prepared a plan of action to address the more immediate needs (see paragraph 13 above). The estimate of the minimum costs to implement the Task Force plan is US$ 12.9 million for work to be done between June 1991 and December 1993. Of this sum, approximately 70% is targeted to intensify support to national programmes.

43. The Task Force has received only a small portion of these funds. As a result, most activities to date have been supported by existing programme budgets and, thus, at the expense of other planned activities. Furthermore, without the required funding, efforts have been limited in several priority areas, including wider implementation of training programmes in case management, distribution of emergency treatment and disinfection supplies, provision of emergency water treatment supplies, the installation of emergency and more permanent sanitary systems, research on the stability of *Vibrio cholerae* 01 in food, and the development and dissemination of much-needed health education and technical information materials.

44. Nevertheless, the Programme Committee of the Executive Board in July 1991, while discussing changes in the programme budget for 1992-1993, recognized cholera control as one of the priorities of the Organization, and recommended that funds be made available from the Director-General's Development Fund to assist the Task Force to meet some of its global responsibilities and respond to the emergency requests of several affected countries (see document EB89/2 Add.1). These funds will also be used, in part, for a full-time staff member, in order to strengthen global coordinating activities.

45. In addition, the Organization has received contributions for cholera control activities from Finland and Germany. A contribution has been made by SIDA for the purchase of vaccine for use in field trials to be conducted in Latin America and possibly elsewhere. The United States Agency for International Development (USAID) has offered to support a Child Survival Fellow to work in cholera control and has made substantial funds available for use in bilateral projects in Latin America. Through its PRITECH project it has also funded training and coordination activities organized by WHO in affected countries in Africa. A German nongovernmental organization has funded a proposal for water and sanitation projects in small villages in Latin America, while the Japan/Peru Association has provided emergency equipment in Peru. Norway increased its 1991 contribution to the CDD Programme, in part to support cholera control efforts. Furthermore, many donors have also generously responded to direct requests from individual countries.

46. This year the Pan American Health Organization (PAHO) participated in the mobilization of more than US$ 12 million for cholera control activities, which was donated by various countries, the European Community, and the Inter-American Development Bank. Of this amount, PAHO has coordinated over US$ 2 million in external assistance to Peru, of which about half has been for medical supplies and ORS. A grant by the Inter-American Development Bank provided support for the local production of ORS, water quality improvement, laboratory supplies, health education, and essential field operations. Projects are being discussed with other organizations to meet the need to mobilize additional financial resources rapidly.

Activate a global technical resource network

47. A number of institutions and individuals (e.g., the International Centre for Diarrhoeal Disease Research, Bangladesh, the Centers for Disease Control in Atlanta, Georgia, United States, and the London School of Hygiene and Tropical Medicine, United Kingdom) have been contacted in order to establish a data base of persons with experience in cholera control, expertise in relevant technical areas, and appropriate language skills. This list is being used to identify consultants in response to requests from cholera-affected areas.

III. FUTURE DIRECTIONS AND TARGETS FOR 1992-1993

48. The Organization is planning for future cholera control activities in Latin America, based on the assumption that the present epidemic will spread to most countries in the region. It also assumes that cholera will become endemic in several of them, as has been the case in other regions which have experienced cholera since 1961, during the course of this seventh pandemic.

49. At the same time, the Organization must strengthen the ability of countries in other regions to respond to endemic cholera and outbreaks in new areas, in particular the countries in Africa and in the Far East that are facing a resurgence of the disease.

50. Specific targets for 1992-1993 are:

(1) Each of the 30 most affected or threatened countries will have:

(a) a national commission on cholera control;

(b) written policies on control measures, including policies on case management, vaccination and vaccination certificates, mass and selective chemoprophylaxis, water supplies and sanitation, food handling, tourism, *cordon sanitaire* and frontier controls, and international and domestic food trade;

(c) written plans for managing cholera cases, mobilizing emergency treatment services, providing emergency safe water and sanitation systems, and informing and educating the public;

(d) an effective and efficient disease surveillance system in place;

(e) health workers trained in the case management of acute diarrhoea, including cholera;

(f) reference laboratories with adequate supplies and staff capable of identifying *Vibrio cholerae* 01;

(g) access of all persons in affected or threatened areas to adequate treatment, including treatment with oral rehydration salts, intravenous fluids, and antibiotics;

(h) strategically placed emergency stocks of appropriate treatment supplies;

(i) available health education materials related to the prevention and treatment of cholera; and

(j) written long-term plans for improving water supplies, sanitation systems, and the health infrastructure.

(2) The revised and expanded *Guidelines for cholera control* will be published initially in three languages (English, French, and Spanish) and widely distributed.

(3) Preliminary steps for conducting cholera vaccine trials in Latin America (and possibly elsewhere) will be completed, including the completion of research protocols, agreements with governments and research institutions, and the preparation of trial sites. One or two trials of vaccine efficacy will be initiated.

51. The Organization has responded to the threat of cholera through global and regional activities, and the unique resources of its representatives in affected and threatened countries. Many countries have been able to meet the challenge presented to them by cholera with effective, coordinated efforts - from the establishment of national, intersectoral commissions to the work of health staff struggling against this disease.

52. If this political and personal commitment can be sustained, and the resources to support these activities are available, it is expected that lasting results will be seen in the health of people in affected countries. The efforts to fight cholera result in improvements in diarrhoeal disease control programmes, epidemiological surveillance, drinking-water, food handling policies and practices, and health education. However, additional resources are needed to continue this work in order to reinforce national efforts. Furthermore, major international and bilateral investments are required in order to strengthen the health infrastructure and implement large-scale environmental sanitation and water safety projects for the effective prevention of cholera and other diarrhoeal diseases.

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WORLD HEALTH ORGANIZATION
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EXECUTIVE BOARD

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CHOLERA IN 1991

Update, January 1992

This addendum provides, for the information of the Executive Board, the most recent information available concerning the global cholera situation and the activities undertaken by WHO in response to resolution WHA44.6. It should be read in conjunction with document EB89/22.

Epidemic and endemic cholera continue to be reported, a total of over 25 000 new cases being reported from 20 countries (seven in the African Region, 10 in the Region of the Americas and three in the South-East Asia Region) during December 1991. Venezuela is the latest country to report cases. The cases and deaths reported worldwide during 1991 are summarized in the attached table.

The Global Task Force on Cholera Control has continued its activities including support to individual countries. The WHO Regional Office for the Americas organized an international meeting in Washington D.C. (9-10 December 1991) on "The Cholera Crisis - a Challenge for Health and Development". Countries of the Region and representatives of various international and bilateral agencies discussed the impact of cholera and its significance as a stimulus to strengthening health and environmental services. The countries presented their plans for cholera control.

An African regional meeting on coordination of cholera control and prevention took place in Benin (13-16 January 1992) with participants from 14 countries. Like the meeting in Lusaka in March 1991, this was a valuable opportunity for countries to clarify their plans for dealing with cholera within the context of diarrhoeal disease control and longer-term development.

WORLD HEALTH ORGANIZATION ORGANISATION MONDIALE DE LA SANTE

GLOBAL CHOLERA UPDATE

Cumulative figures for 1991: data received up to 16 January 1992

	Cases	Deaths
AFRICAN REGION		
Angola	8 412	247
Benin	4 844 *	206
Burkina Faso	322	46
Burundi	3	0
Cameroon	3 560	729
Chad	13 409	1 313
Côte d'Ivoire	604	116
Ghana	13 095	409
Liberia	132	40
Malawi	8 088	245
Mozambique	6 124	273
Niger	3 227	365
Nigeria	56 352	7 289
Rwanda	466	28
Sao Tome and Principe	3	1
Togo	2 396	81
Uganda	145	21
United Republic of Tanzania	2 998	243
Zambia	11 789	996
Total	135 969	12 648

	Cases	Deaths
REGION OF THE AMERICAS		
Bolivia	175	12
Brazil	990	20
Canada	2 [i]	0
Chile	41	2
Colombia	11 218	203
Ecuador	44 126	672
El Salvador	1 037	34
Guatemala	3 530	47
Honduras	11	0
Mexico	2 605	34
Nicaragua	1	0
Panama	1 177	29
Peru	301 277 [•]	2 840
United States of America	25 [i]	0
Venezuela	13 (8[i])	0
Total	366 228	3 893
SOUTH-EAST ASIA REGION		
Bhutan	422	19
India	4 262	79
Indonesia	6 202 [•]	55
Nepal	472	2
Sri Lanka	68	2
Total	11 426	157
EUROPEAN REGION		
France	7 [i]	0
Romania	226	9
Spain	1 [i]	0
Ukraine	75	0
USSR***	2 [i]	0
Total	311	9

	Cases		Deaths
EASTERN MEDITERRANEAN REGION			
Iran, Islamic Republic of	2	**	0
Iraq	875		6
Total	877		6
WESTERN PACIFIC REGION			
Cambodia	770		97
Hong Kong	5		0
Japan	93	(66[i])	0
Malaysia	201		2
Republic of Korea	112		4
Singapore	34	(4[i])	0
Total	1 215		103
GRAND TOTAL	516 026		16 816

i = imported.
s = suspect.
* = some cases occurred in December 1990.
** = cases occurred in refugee camps.
*** = The figures available refer to republics of the former Union of Soviet Socialist Republics, excluding Ukraine.

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