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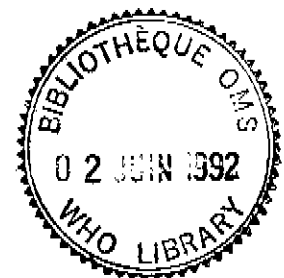
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WORLD SURVEY OF RABIES 25

(for year 1989)

by

Veterinary Public Health Unit
Division of Communicable Diseases
World Health Organization
Geneva, Switzerland



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1. INTRODUCTION

The Twenty-fifth World Survey of Rabies for the year 1989 is an analysis of data returned from 109 countries and territories out of 166 countries receiving the questionnaire.

Computerized data processing and editing has been used to prepare Tables 1-4 reporting on five major topics: number of human/animal rabies cases; number of persons treated against rabies; production/import of human and animal rabies vaccines. Computerized data sorting has also been used for preparation of the following summary, including Lists A and B, as well as for the tables in Annexes 1-2.

Veterinary Public Health
Division of Communicable Diseases

2. SUMMARY OF REPLIES RECEIVED

2.1 1989 Rabies trends

2.1.1 Presence/absence of rabies (by country)

Lists A and B name the countries by continent which declared during 1989 that no rabies cases were reported, or that rabies was present. Map No. 1 shows where rabies was, or was not present in 1989 for the countries which replied to the questionnaire.

LIST A: COUNTRIES WHERE NO RABIES CASES WERE REPORTED IN 1989

CONTINENT	COUNTRY	CONTINENT	COUNTRY	
<u>Africa</u>	Comoros	<u>Europe</u>	Denmark	
	Djibouti		Gibraltar	
	Mauritius		Greece	
<u>Americas</u>	Bahamas		Iceland	
	Barbados		Ireland	
	Bermuda		Malta	
	British Virgin Islands		Portugal	
	French Antilles		Sweden	
	Jamaica		United Kingdom	
	Netherlands Antilles		<u>Oceania</u>	Australia
	St Kitts			French Polynesia
	Suriname	Guam (USA)		
Venezuela	New Zealand			
	Papua New Guinea			
<u>Asia</u>	Bahrain	Samoa		
	Hong Kong	Solomon Islands		
	Japan	Vanuatu		
	Korea			
	Libya			
	Malaysia			
	Qatar			
	Singapore			
	United Arab Emirates			

LIST B: COUNTRIES WHERE RABIES WAS REPORTED IN 1989

CONTINENT	COUNTRY	CONTINENT	COUNTRY
<u>Africa</u>	Angola	<u>Asia</u>	Afghanistan
	Botswana		Bangladesh
	Burkina Faso		Bhutan
	Cameroon		China
	Central Africa		India
	Ethiopia		Iran
	Ghana		Iraq
	Kenya		Israel
	Madagascar		Jordan
	Malawi		Lebanon
	Morocco		Pakistan
	Niger		Saudi Arabia
	Rwanda		Sri Lanka
	Senegal		Syria
	South Africa		
	Zambia	<u>Europe</u>	Austria
	Zimbabwe		Belgium
	Czechoslovakia		
<u>Americas</u>	Argentina		Finland
	Belize		France
	Brazil		Germany
	Canada		Hungary
	Chile		Luxembourg
	Colombia		Netherlands
	Costa Rica		Norway
	Cuba		Poland
	Ecuador	Romania	
	El Salvador	Spain	
	Grenada	Switzerland	
	Guatemala	USSR	
	Honduras	Yugoslavia	
	Mexico		
	Nicaragua	<u>Oceania</u>	Philippines
	Panama		
	Paraguay		
Peru			
Trinidad			
USA			

2.1.2 Elimination/introduction of Rabies

Three countries (Malawi, Costa Rica, Iraq) reported the introduction of rabies since 1988. Elimination of the disease in 1988 with no cases diagnosed in 1989 was reported from Djibouti, Libya and Denmark.

2.1.3 Main rabies epidemiological pattern

Africa In Africa, 88% of the countries indicated that canine rabies was the main pattern of the disease. Wildlife rabies was also reported in thirty-three per cent of those countries. As in 1988, wildlife rabies remained the main problem in Botswana and South Africa.

Americas Wildlife was first in order of importance in Canada, Cuba and Grenada. In 48% of countries in the Americas, canine rabies was considered to be the major pattern of the disease. In the USA, bat rabies (insectivorous) remained second to wildlife. Bat rabies was the only pattern reported in Chile, Costa Rica, Panama, and Trinidad and Tobago.

Asia In all countries, except Saudi Arabia, canine rabies was reported as being the major pattern of the disease. Wildlife rabies was the second in order of importance in India, Iraq, Jordan, Pakistan, and Sri Lanka.

Europe Most countries reported wildlife rabies as the major pattern. Canine rabies came first in order of importance in non-continental Spain and in Turkey and was second in Hungary, Israel, Poland, Rumania, and USSR. Rabies in European bats was the only pattern reported from the Netherlands. In France, Germany and Spain, wildlife was first in importance.

Oceania The Philippines reported canine rabies as the major pattern.

2.1.4 Geographical distribution and trends in individual countries

Annex 1, as well as Maps 1 & 2 provide information on the distribution of the disease in a given country with three mutually exclusive possibilities, (i.e. rabies present in the entire country or in limited areas or in border areas) and on the trend of the disease with three possible choices (e.g. stable, increasing, decreasing). According to the questionnaire increase or decrease means a variation of at least 10% against the number of rabies cases reported during the preceding year.

Africa All but one country (South Africa) reported that rabies was present in the entire territory. In most cases the trend was reported to be on the increase (47%) or to be stable (40%).

Americas More than 82% of the countries reported that the disease was present whether in the entire country (50%) or in limited areas (50%). In general, the rabies situation seemed stable in most countries; seven countries reported an increase, and three a decrease in disease incidence.

Asia 77% of the countries declared rabies present in the entire territory. About 64% reported that the trend was stable. Two countries indicated that the number of cases had increased in comparison to 1988.

Europe In most countries the disease was only reported in limited or border areas. The trend was reported to be stable in 37% of countries and increasing in 50%.

Oceania The only country where rabies cases were reported is the Philippines. The whole country is infected.

2.2 Vaccine production and imports

Data provided by each country are given in Table 4 entitled "Human and animal rabies vaccines produced domestically and imported in 1989". Data on animal vaccines compiled in this table were processed to prepare Annex 2: Veterinary vaccination application in dogs.

2.2.1 Human rabies vaccines production and imports

In response to the questionnaire, 22 out of 109 countries or territories produced human rabies vaccine in 1989. Sixteen countries produced only vaccines prepared on brain tissues (for information on the vaccine types and quantities - see Table 4). Five countries (USA, China, France, the Netherlands, USSR) only produced rabies vaccines on cell culture. More than 88% of all human vaccines prepared in these 16 countries were produced on nervous tissues. Only 1.8% were produced on embryonating eggs.

Forty-six countries reported importing human vaccines (see Table 4 for type and quantity), out of which 76% were vaccines prepared on cell culture only, about 7% were vaccines prepared on embryonated eggs, 20% were vaccines prepared on brain tissues. About a quarter of the countries in Africa and America, 38% in Asia and 58% in European countries imported human vaccines prepared on cell culture.

2.2.2 Veterinary vaccine production and imports

Thirty out of 109 countries or territories reported producing animal rabies vaccines. Forty per cent produced only vaccines prepared on brain tissues and 7% only prepared on embryonating eggs. About 50% prepared vaccines on cell culture either as the only type (69%) or together with a second vaccine type (in most cases a brain tissues vaccine).

Forty-nine countries or territories reported importing animal rabies vaccines. More than 87% of these vaccines were prepared on cell culture (see Table 4 for quantity). In Africa, 35% of the countries imported cell culture vaccines for veterinary use, whereas this percentage was 27% in the Americas, 46% in Asia and 50% in Europe and Oceania.

2.3 Rabies postexposure treatment

Data on the number of persons treated and the animal species involved are given in Table 3.

2.4 Vaccine application in animals

Regarding the characteristics of dog immunization against rabies, vaccination is compulsory in 60% of the African countries as well as in 60% of those belonging to the Americas, 33% of those located in Asia, 54% of the European countries and none of the countries of Oceania. In countries where rabies is only present on islands (e.g. Svalbard Islands of Norway), dog vaccination is forbidden on the mainland and compulsory in infected areas. Rabies free countries sharing borders with rabies infected countries may

enforce a policy of compulsory vaccination in border areas and optional vaccination in the rest of the country (e.g. Greece).

An indication of the number of dogs immunized in 1989 and an estimate of the vaccination coverage (in %) is given in Annex 2. Coverage was rarely above 50% for developing countries of Africa (32%) and Asia (43%) where it seems likely that the total dog population was underestimated in most cases. In the Americas, the average dog vaccination coverage was about (34%) and a higher portion of dogs was reported to be vaccinated in Europe (70%).

2.5 Diagnostic techniques used in human and animal laboratories

FAT is the most widely used technique to diagnose rabies in humans (33%). Nineteen per cent of laboratories responsible for human rabies diagnosis used the MIT, 13% histological techniques, and 5% other techniques. Five per cent of countries replied that they were using MIT or histology only in 1989 for confirming the disease in people.

More than 66% of the animal rabies diagnosis laboratories used FAT. About 37% of these laboratories simultaneously carried out the MIT, 29% histological techniques and 7% other techniques. Five per cent of the countries only used MIT and/or histology for rabies diagnosis in animals.

3. Tables 1-4

TABLE 1: Number of human cases by source of animal exposure and method of confirmation: 1989

<u>Africa</u>	Most of the human cases (59%) were diagnosed clinically without any further laboratory examination. Dogs were responsible for 92% of the deaths for which information on exposure was provided. Wild animals species were very rarely involved (6%).
<u>Americas</u>	About 70% of the human cases diagnosed in the Americas were confirmed by laboratory examination. For those human deaths due to rabies for which information on exposure was provided the dog remained responsible for the majority (77%) of the deaths and wildlife species (mainly bats) were at the origin of 19% of those.
<u>Asia</u>	Rabies diagnosis was mainly (98%) made on clinical grounds alone. Regarding offending animals, the dog is the main species at origin of exposure (98%).
<u>Europe</u>	Autochthonous cases in humans were reported in Romania, Czechoslovakia and Yugoslavia. In USSR 37 cases occurred. All rabies deaths were confirmed in the laboratory.
<u>Oceania</u>	Rabies death cases have been reported in the Philippines. All diagnosis were made on clinical grounds. No information on exposure was provided.

TABLE 2: Number of animal rabies cases by species and method of confirmation: 1989

<u>Africa</u>	Two-thirds of the total number of reported cases were confirmed in the laboratory in the following main species or group of species: dogs (56%), livestock (31%), other domestic animals (3%) and wildlife (10%).
<u>Americas</u>	A total of about 28500 animal cases were diagnosed (61% in the laboratory). More than half of laboratory confirmed cases were diagnosed in dogs. Rabies cases in wildlife species reported in Canada and USA accounted for 99% of the total cases in wildlife in the Americas.
<u>Asia</u>	Most animal rabies cases were diagnosed on clinical grounds only (81%). The dog was the main species involved (75%). Cases in livestock accounted for 12% of the total number of cases confirmed in the laboratory.
<u>Europe</u>	All but three cases were confirmed by laboratory techniques. About 13 000 cases were diagnosed in foxes (58%). Livestock were victims of the disease in 21% of the cases and dogs accounted for less than 5% of the total, followed by cats.

TABLE 3: Number of persons treated against rabies by source of animal exposure and type of treatment: 1989

Dogs were the origin of exposure in 87% of the human post-exposure treatments administered in Africa, 94% in the Americas and in Asia, and 55% in Europe. In Europe, exposure to wildlife species accounted for 12% of the treatments.

Rodents (mainly rats) were the major wildlife species at the origin of human exposure in Asia. Rodents and bats accounted for most of the treatments applied following exposure to wildlife species in the Americas. In Europe, when considering exposure to wildlife species only, the number of treatments following exposure to rodents (21%) came next to those associated with exposure to foxes (52%).

Vaccine alone was applied in most cases in Africa, Central and South America, Asia and European countries. In Canada, USA and Australia, serum and vaccine were systematically administered together.

TABLE 1. NUMBER OF HUMAN RABIES CASES BY SOURCE OF ANIMAL EXPOSURE AND METHOD OF CONFIRMATION; 1989

Continent: Africa	Country	Method of Diagnosis		Reported Exposure to Domestic Animals			Reported Exposure to Wild Animals							
		Lab- oratory	Clinical only	Total	Dog	Cat	Other	Fox	Skunk	Rac- coon	Mon- goose	Bat	Other	
	Angola	0	0	0										
	Botswana													
	Burkina Faso													
	Cameroon													
	Central African Republic													
	Comoros		0	0										
	Djibouti	0	33	33	31	1	1				0	0	0	0
	Ethiopia	3	3	3	3									
	Ghana	0	0	0										
	Kenya	0	5	5	5									
	Madagascar													
	Malawi													
	Mauritius													
	Morocco	8	9	17	17	0			0					
	Niger													
	Rwanda	0	14	14										
	Senegal	9	2	9	6									3
	South Africa	20	0	20										
	Zambia	6	4	10	4									1
	Zimbabwe													
	Total for Africa	46	67	113	66	1	1		0	0	0	0	0	4

TABLE 1. NUMBER OF HUMAN RABIES CASES BY SOURCE OF ANIMAL EXPOSURE AND METHOD OF CONFIRMATION; 1989

Continent: Americas	Country	Method of Diagnosis		Reported Exposure to Domestic Animals			Reported Exposure to Wild Animals										
		Lab-oratory	Clinical only	Total	Dog	Cat	Other	Fox	Skunk	Rac-coon	Mon-goose	Bat	Other				
	Argentina	0	0	0													
	Aruba (Neth. Antilles)	0	0														
	Bahamas																
	Barbados	0	0	0			2	1	0			0	0	0	0		0
	Belize	2	1	3													
	Bermuda						40	1	7			3					2
	Brazil	26	27	53													
	British Virgin Islands																
	Canada	0	0	0													
	Chile						10	0	0			0	0	0	3		0
	Colombia	15	0	15													
	Costa Rica	0	0														
	Cuba																
	Ecuador	22		22			22	0	0			0					0
	El Salvador	1	0	1			1										
	French Antilles	0	0														
	Grenada																
	Guatemala	13		13			13										
	Honduras	1	3	4			2	0	0			1	0	0	0		1
	Jamaica,																
	Mexico	47	18	65			56	3	0			0	0	0	3		2
	Netherlands Antilles																
	Nicaragua	1		1			1										
	Panama																
	Paraguay																
	Peru	20	21	41			13	1	3								24
	St Kitts, W.I.																
	Suriname																
	Trinidad																
	USA	1	0	1													
	Venezuela																
	Total for Americas	149	70	219	160	6	10	4	0	0	0	0	0	0	35	3	3

TABLE 1. NUMBER OF HUMAN RABIES CASES BY SOURCE OF ANIMAL EXPOSURE AND METHOD OF CONFIRMATION; 1989

Continent: Europe	Country	Method of Diagnosis		Reported Exposure to Domestic Animals				Reported Exposure to Wild Animals						
		Lab- oratory	Clinical only	Total	Dog	Cat	Other	Fox	Skunk	Rac- coon	Mon- goose	Bat	Other	
	Austria	0	0	0										
	Belgium	0	0	0										
	Czechoslovakia	1		1	1									
	Denmark	0		0										
	Finland	0	0	0										
	France	0	0	0										
	Germany	0	0	0										
	Gibraltar	0	0	0										
	Greece													
	Hungary	0	0	0										
	Iceland	0	0	0										
	Ireland	0	0	0										
	Luxembourg	0	0	0										
	Malta	0	0	0										
	Netherlands	0	0	0										
	Norway													
	Poland													
	Portugal	0	0	0										
	Romania	4	0	4										
	Spain	0	0	0										
	Sweden	0	0	0										
	Switzerland	0	0	0										
	United Kingdom	0	0	0										
	USSR	37		37	19	0		4		1				1
	Yugoslavia	1		1	1									
	Total for Europe	43	0	43	21	1	0	7	0	1	0	0	0	1

TABLE 1. NUMBER OF HUMAN RABIES CASES BY SOURCE OF ANIMAL EXPOSURE AND METHOD OF CONFIRMATION; 1989

Continent: Oceania	Method of Diagnosis		Reported Exposure to Domestic Animals			Reported Exposure to Wild Animals						
	Lab- oratory	Clinical only	Total	Dog	Cat	Other	Fox	Skunk	Rac- coon	Mon- goose	Bat	Other
Australia	0	0	0									
French Polynesia												
Guam (USA)	0	0	0									
New Zealand												
Papua New Guinea												
Philippines	0	438	438									
Samoa												
Solomon Islands	0	0	0									
Vanuatu												
Total for Oceania	0	438	438	0	0	0	0	0	0	0	0	0
Total for the World	277	2499	2499	1559	14	11	19	0	3	0	33	28

TABLE 2. NUMBER OF ANIMAL RABIES CASES BY SPECIES AND METHOD OF CONFIRMATION, 1989

Continent: Africa	Country	Method of Diagnosis		Laboratory Confirmed Cases in Domestic Animals					Laboratory Confirmed Cases in Wild Animals										
		Lab- oratory	Clinical only	Total	Dog	Cat	Rumi- nant	Equine	Other	Fox	Skunk	Rec- coon	Mon- goose	bat	Other				
	Angola	5		5			2		3					1				18	
	Botswana	98	15	113	17	0	57	4							1				
	Burkina Faso	26		26	26	0	0											0	
	Cameroon	8		8	8	0	0											0	
	Central African Republic	43	0	43	41	1	1								0			0	
	Comoros		0	0															
	Djibouti	94	0	94	83	3	7	1										0	
	Ethiopia	22		22	17	5													
	Ghana	195		195	123	4	60	2						2	1			3	
	Kenya	28	77	105	23	2	3											0	
	Madagascar	157		157	128	1	24											4	
	Malawi																		
	Mauritius																		
	Morocco	269	551	820	142	18	83	26											
	Niger	16		16	13	1	2											1	
	Rwanda	14		14	13	0												1	
	Senegal	5	0	5	2	2												1	
	South Africa	443	88	531	164	12	151	1							77			38	
	Zambia	41	37	78	31	0	10												
	Zimbabwe	209	0	209	93	3	81	7							0			19	
	Total for Africa	1673	768	2441	926	52	482	41	0					3	0	0	79	0	84

TABLE 2. NUMBER OF ANIMAL RABIES CASES BY SPECIES AND METHOD OF CONFIRMATION; 1989

Continent: Asia Country	Method of Diagnosis		Laboratory Confirmed Cases in Domestic Animals					Laboratory Confirmed Cases in Wild Animals						
	Lab- oratory	Clinical only	Total	Dog	Cat	Rumi- nant	Equine	Other	Fox	Skunk	Rac- coon	Mon- goose	bat	Other
Afghanistan	1	1000	1001	1										
Bahrain	0	0												
Bangladesh	32	356	388	15	2	15	0							
Bhutan	2		2	1		1								
China	2			2										
Hong Kong	0	0	0	0	0									0
India	283	4721	5004	248	2	19	9			2				3
Iran	321	235	556	126	6	91	15	15	8		0	60		4
Iraq	35		35	27	1				3					8
Israel	58		58	13	0	5	1		31		0	0		
Japan	0	0	0											
Jordan	6		6	5	0				1		0			
Korea	0	0	0	0										
Lebanon		9	9											
Libya				0										
Malaysia	0	0	0											
Pakistan	35		35	23		5	1			6				0
Qatar														
Saudi Arabia	29		29	4	7	5			8					5
Singapore	0	0	0					0						
Sri Lanka	734		734	617	39	6				11	0	3		
Syria	14		14	10		3								1
United Arab Emirates														
Total for Asia	1552	6321	7872	1092	57	150	26	34	51	0	0	19	0	84

TABLE 2. NUMBER OF ANIMAL RABIES CASES BY SPECIES AND METHOD OF CONFIRMATION, 1989

Continent: Europe	Country	Method of Diagnosis		Laboratory Confirmed Cases in Domestic Animals					Laboratory Confirmed Cases in Wild Animals						
		Lab- oratory	Clinical only	Total	Dog	Cat	Rumi- nant	Equine	Other	Fox	Skunk	Rec- coon	Mon- goose	bat	Other
	Austria	1889		1889	5	34	19	1		1617				213	
	Belgium	838	3	841	12	33	238	10	1	520			0	27	
	Czechoslovakia	1653	0	1653	20	61	10	0	2	1542			1	17	
	Denmark	1		1	0	0	0	0		0			1		
	Finland	6	0	6	0	0	0	0		2			0	4	
	France	4213		4213	53	117	514	37	5	3340		2	35	112	
	Germany	3228	0	3228	27	78	241	16	0	2491	1		10	364	
	Gibraltar	0	0	0	0	0	0	0		0			0		
	Greece				0	0	0	0	4	840			0	17	
	Hungary	1061		1061	61	79	60	0							
	Iceland	0	0	0											
	Ireland	0	0	0											
	Luxembourg	140		140	1	3	63	0		67				6	
	Malta	0	0	0											
	Netherlands	23		23	0	0	0	0		0		23	0		
	Norway	0	0	0											
	Poland	1891		1891	83	149	164	1	7	1176				326	
	Portugal	0	0	0	0	0	0	0							
	Romania	33		33	2	3	22	0		3			3		
	Spain	6		6	1	0	0	0		0			5	0	
	Sweden	0	0	0	0	0	0	0		0			0	0	
	Switzerland	60	0	60	0	0	2	0	0	56			0	2	
	United Kingdom	0	0	0	0	0	0	0		0			0	0	
	USSR	6206		6206	824	451	3234	95	304					1298	
	Yugoslavia	1409		1409	18	32	15	4		1287	2			51	
	Total for Europe	22657	3	22660	1107	1040	4582	164	323	12941	2	1	2	75	2440

TABLE 3. NUMBER OF PERSONS TREATED AGAINST RABIES BY SOURCE OF ANIMAL EXPOSURE AND TYPE OF TREATMENT; 1989

Continent: Americas	Persons Treated for Exposure to Domestic Animals			Persons treated for Exposure to Wild Animals			Persons Receiving					
	Dog	Cat	All others Total	Fox	Rodent	Bat	others Total	Vaccine alone	Vacc. & Serum serum			
Country												
Argentina	29345	690	4	30043				30000	30			
Aruba (Neth. Antilles)								0	0			
Bahamas												
Barbados	145	1	7	160	0	2	3	158	0			
Belize												
Bermuda												
Brazil								178304	11148			
British Virgin Islands												
Canada	904	584	409	2306	277	8	203	2500	488			
Chile	9217			9217				9217				
Colombia	6324	315	293	7198	112	655	73	7624	348			
Costa Rica	3	0	20	20		10	0	30	0			
Cuba	1022	303	172	1497			99	1576	99			
Ecuador	17164	92	40	17336	0	0	0	17164	0			
El Salvador	4850	162	53	5118				4813	876			
French Antilles												
Grenada		1	4	9			10	15	10			
Guatemala								6444				
Honduras	802	0	0	802				836				
Jamaica,												
Mexico	41215	1283	1610	44108				41330	2778			
Netherlands Antilles												
Nicaragua								1319				
Panama								14				
Paraguay								3500				
Peru	12451	200	85	12821			600	13125	221			
St Kitts, W.I.								0	0			
Suriname												
Trinidad												
USA												
Venezuela												
Total for Americas	123442	3639	2677	130635	389	675	676	512	2252	313879	19492	0

TABLE 3. NUMBER OF PERSONS TREATED AGAINST RABIES BY SOURCE OF ANIMAL EXPOSURE AND TYPE OF TREATMENT; 1989

Continent: Asia	Country	Persons Treated for Exposure to Domestic Animals			Persons treated for Exposure to Wild Animals			Persons Receiving		
		Dog	Cat	All others Total	Fox	Rodent	Bat others Total	Vaccine alone	Vacc. & Serum serum	
	Afghanistan	802		807				425	382	
	Bahrain		2	2				2		
	Bangladesh	58		61			3	267	0	
	Bhutan	114478	3396	117874	1981		10	252208	120596	
	China	2727	414	3574			75	3573	75	
	Hong Kong	4870	9	4933			25	4204	727	
	India	19296	1230	22826	191		1591	12984	11588	
	Iran	3200	80	3306	250		2	3300	1600	
	Iraq	1244	275	1618	59	47	2	1193	558	
	Israel									
	Japan	443	30	569			2	344	197	
	Jordan	0		0				0	0	
	Korea									
	Lebanon									
	Libya									
	Malaysia	3		3				3	0	
	Pakistan									
	Qatar	170	89	12	63		25	128	88	
	Saudi Arabia			283						
	Singapore									
	Sri Lanka									
	Syria	3341		3341				2859	482	
	United Arab Emirates									
	Total for Asia	150632	5525	2917	159197	500	2091	4	2225	4820
								281490	136205	1314

TABLE 3. NUMBER OF PERSONS TREATED AGAINST RABIES BY SOURCE OF ANIMAL EXPOSURE AND TYPE OF TREATMENT; 1989

Continent: Europe	Persons Treated for Exposure to Domestic Animals			Persons treated for Exposure to Wild Animals			Persons Receiving		
	Dog	Cat	All others Total	Fox	Rodent	Bat	All others Total	Vaccine alone	Vacc. & Serum serum
Austria	608	406	1115	79	101		90	1297	95
Belgium	188	191	702	91	19	2	40	1024	209
Czechoslovakia	1444	811	2353	326	64	5	148	2289	572
Denmark	50		50			2	7		59
Finland	60	35	20	5	10	10	10	150	72
France	4629	2194	1337	708	264	19	207	8878	825
Germany									
Gibraltar	5		5					4000	5
Greece				268	40	1	60	3422	0
Hungary	919	400	266					0	0
Iceland	1		1				1	1	1
Ireland	62	29	129	19	0	0	10	248	0
Luxembourg			342					0	0
Malta	2	3	24					29	0
Netherlands			29						
Norway								4290	43
Poland	1847	889	387	531	281		398	24	
Portugal	17	5	2					13131	1450
Romania								750	30
Spain	520	30	550			14	0	240	35
Sweden								14	58
Switzerland	27	32	2	5	2		4	404	0
United Kingdom	401	108	1	0	19	6	61	231031	208
USSR								2808	
Yugoslavia	2312	482	51	324	118	3	93		632
Total for Europe	13092	5615	2984	2356	918	62	1029	274030	4294
			24658				4465		796

TABLE 3. NUMBER OF PERSONS TREATED AGAINST RABIES BY SOURCE OF ANIMAL EXPOSURE AND TYPE OF TREATMENT; 1989

Continent: Oceania	Persons Treated for Exposure to Domestic Animals			Persons treated for Exposure to Wild Animals			Persons Receiving					
	Dog	Cat	All others Total	Fox	Rodent	Bat	Vaccine alone	Serum				
Australia												
French Polynesia												
Guam (USA)							0	0				
New Zealand							0	0				
Papua New Guinea								0				
Philippines												
Samoa												
Solomon Islands												
Vanuatu												
Total for Oceania	0	0	0	0	0	0	0	0				
Total for the World	305898	15015	11091	336046	3245	3731	742	3935	11653	878310	160601	2120

TABLE 4. HUMAN AND ANIMAL RABIES VACCINES PRODUCED DOMESTICALLY AND IMPORTED; 1989

Continent: Africa	animal rabies vaccines (in doses)						human rabies vaccines (in doses)					
	produced			imported			produced			imported		
	NTC	TCO	EEO	NTC	TCO	EEO	NTC	TCO	EEO	NTC	TCO	EEO
Angola												
Botswana												
Burkina Faso				120000								
Cameroon				5961								
Central African Republic												
Comoros				500			0	0	0	5700		
Djibouti												
Ethiopia							89800					50000
Ghana	19280			200000								
Kenya							5000			21000		
Madagascar												
Malawi												
Mauritius												
Morocco												
Niger												
Rwanda												
Senegal									10000			
South Africa				399850								
Zambia												
Zimbabwe				500000								
total for Africa	32480	1326649		1726311		10000	172600		0	26753	32370	55743

TABLE 4. HUMAN AND ANIMAL RABIES VACCINES PRODUCED DOMESTICALLY AND IMPORTED; 1989

Continent: America	animal rabies vaccines (in doses)						human rabies vaccines (in doses)					
	produced			imported			produced			imported		
	NTO	TCO	EEO	NTO	TCO	EEO	NTO	TCO	EEO	NTO	TCO	EEO
Argentina												
Aruba (Netherlands Ant.)				170			0	0	0			
Bahamas												
Barbados												
Belize				71000								400
Bermuda							100000					
Bogota	10000000	2000000					2500000					
Brazil	15000000											
British Virgin Islands				100								
Canada												
Chile	281000						81000					
Colombia	1000000	2000000					10000					
Costa Rica	0	0		50000	8000		99726			500		
Cuba	871060						300000					
Ecuador	239075									33000		1000
El Salvador				120								
French Antilles				11100						250		
Grenada												
Guatemala	160000						115000					
Honduras	266025			200000			16550			0		
Jamaica												
Mexico	1303000	5879000					1196846					2133
Netherlands Antilles												
Nicaragua												
Panama				9600								
Paraguay												
Peru	180130	80880		160000	74000		98418			30000		150
St Kitts, W.I.												
Suriname												
Trinidad												
USA				29932702								
Venezuela				2604690								
total for America	19300290	40297272		1001320	2331070		4417540	2669	0	165530	137757	

TABLE 4. HUMAN AND ANIMAL RABIES VACCINES PRODUCED DOMESTICALLY AND IMPORTED; 1989

Continent: Asia	animal rabies vaccines (in doses)						human rabies vaccines (in doses)					
	produced			imported			produced			imported		
	NTD	TCO	EEO	NTD	TCO	EEO	NTD	TCO	EEO	NTD	TCO	EEO
Afghanistan				57750	500		12000			60000		36
Bahrain			3356									
Bangladesh					10000		0	1425000			330	
Bhutan			0	4369984	0						36000	
China					26000						8710	
Hong Kong												
India - (doses)	9000		1000				2000000					
India - (litres)	17325						40000		1000			
Iran											20000	
Iraq											7500	
Israel				0	0	0				0	0	0
Japan					900						6952	
Jordan												
Korea												
Lebanon												
Libya					3000		100					
Malaysia					7000							
Pakistan					4900							
Qatar	62833		3275									
Saudi Arabia					500						400	
Singapore					20000						30000	
Sri Lanka					1100							
Syria					10000						20000	
United Arab Emirates												
total for Asia - (doses)	5460158	4761424	6631	57750	263900	0	2012100	1425000	0	60000	129902	36
total for Asia - (litres)	9000	1000					400000	1000				

TABLE 4. HUMAN AND ANIMAL RABIES VACCINES PRODUCED DOMESTICALLY AND IMPORTED, 1989

Continent: Europe	animal rabies vaccines (in doses)						human rabies vaccines (in doses)					
	produced			imported			produced			imported		
	MTO	TCO	EEO	MTO	TCO	EEO	NTO	TCO	EEO	NTO	TCO	EEO
Austria											7605	
Belgium					175000					0	6000	
Czechoslovakia		1300000									60000	
Denmark					32000						689	
Finland					60000						4199	
France												
Germany		2700000	599650		0	1061969	0	449000	1034279	0	20292	0
Gibraltar					2500							
Greece		1800000	14000									
Hungary					50000						4200	
Iceland											21000	
Ireland												
Luxembourg					18000			0	0	0	1784	
Malta												
Netherlands												
Norway												
Poland					400							
Portugal					15000				12000			
Romania	902821				25870							
Slovenia	1800000							220000			25000	
Spain		6000000										
Sweden		0	0		500			0	0	0	1000	0
Switzerland		0	0								2000	
United Kingdom		0	39000		0	0		0	0	0	3015	
USSR	2580000	1500000			0	3658	0	0	0	0	32285	
Yugoslavia	0		0					0	3000000	0	0	0
total for Europe	28502821	13339000	613650	0	1444897	0	220000	3601427	1034279	1784	206540	0

TABLE 4. HUMAN AND ANIMAL RABIES VACCINES PRODUCED DOMESTICALLY AND IMPORTED; 1989

Continent: Oceania	animal rabies vaccines (in doses)						human rabies vaccines (in doses)					
	produced			imported			produced			imported		
	NTO	TCO	EEO	NTO	TCO	EEO	NTO	TCO	EEO	NTO	TCO	EEO
Australia					300							
French Polynesia												
Guam (USA)												
New Zealand												
Papua New Guinea					487890			320000	0		0	50000
Philippines												
Samoa	0	0	0					0	0	0		
Solomon Islands					1							
Vanuatu												
total for Oceania	0	0	0	0	488191	0	320000	0	0	0	51189	0
total for the World - (doses)	47895749	59724345	620281	1059070	6254369	10000	7142240	5029096	1034279	254067	557758	55779
- (litres)	9000	1000					40000	1000				

ANNEX 1

RABIES TRENDS BY COUNTRY AND CONTINENT

Continent	Country	Geographical distribution	Trend
<u>Africa</u>	Angola	Entire country	stable
	Botswana	Entire country	increase
	Burkina Faso	Entire country	stable
	Cameroon	Entire country	stable
	Central African Rep.	Entire country	increase
	Ethiopia	Entire country	stable
	Ghana	Entire country	decrease
	Kenya	Entire country	increase
	Madagascar	Entire country	increase
	Malawi	Entire country	increase
	Morocco	Entire country	decrease
	Niger	Entire country	
	Rwanda	Entire country	increase
	Senegal	Entire country	
South Africa	Limited areas	stable	
Zambia	Entire country	increase	
Zimbabwe	Entire country	stable	
<u>America</u>	Argentina	Limited areas	decrease
	Belize	Limited areas	increase
	Brazil	Entire country	increase
	Canada	Entire country	decrease
	Chile	Limited areas	stable
	Colombia	Entire country	increase
	Costa Rica	Limited areas	increase
	Cuba	Limited areas	increase
	Ecuador	Entire country	stable
	El Salvador	Border areas	
	Grenada	Entire country	stable
	Guatemala	Entire country	decrease
	Honduras	Border areas	
	Mexico	Limited areas	stable
	Nicaragua	Entire country	
	Panama	Entire country	increase
	Paraguay	Border areas	
	Peru	Entire country	stable
	Trinidad	Limited areas	stable
USA	Entire country	stable	
<u>Asia</u>	Afghanistan	Entire country	increase
	Bangladesh	Entire country	decrease
	Bhutan	Entire country	stable
	China	Limited areas	increase
	India	Entire country	stable
	Iran	Entire country	stable
	Iraq	Limited areas	increase
	Israel	Entire country	increase
	Jordan	Entire country	stable
	Lebanon	Border areas	stable

ANNEX 1

RABIES TRENDS BY COUNTRY AND CONTINENT (Continued)

Continent	Country	Geographical distribution	Trend
<u>Asia</u> (Con'd)	Pakistan	Entire country	
	Saudi Arabia	Entire country	stable
	Sri Lanka	Entire country	increase
	Syria	Entire country	
<u>Europe</u>	Austria	Entire country	stable
	Belgium	Limited areas	increase
	Czechoslovakia	Entire country	stable
	Finland	Limited areas	decrease
	France	Limited areas	increase
	Germany	Entire country	increase
	Hungary	Entire country	stable
	Luxembourg	Entire country	increase
	Netherlands	Entire country	stable
	Norway	Limited areas	
	Poland	Entire country	increase
	Romania	Limited areas	stable
	Spain	Border areas	stable
	Switzerland	Border areas	decrease
USSR	Limited areas	increase	
Yugoslavia	Limited areas	increase	
<u>Oceania</u>	Philippines	Entire country	stable

ANNEX 2

VETERINARY VACCINE APPLICATION TO DOGS

Continent	Country	Status ¹	Number of dogs immunized	Coverage (in %)	% vaccinated	
					priv.	public
<u>Africa</u>	Angola	comp.				
	Botswana	comp.	80373			
	Burkina Faso	comp.	1536	25	0	100
	Cameroon					
	Central African Republic	comp.		5	100	0
	Comoros	comp.				
	Djibouti	opt.	400	80	0	100
	Ethiopia	opt.	19000	63		
	Ghana	comp.			0	100
	Kenya	opt.		30	75	25
	Madagascar	comp.				
	Malawi	comp.	29360	10		95
	Mauritius					
	Morocco	comp.	230923	50	20	80
	Niger	opt.	763		0	100
	Rwanda	comp.	4523	4	0	100
	Senegal					
	South Africa	comp., opt.	774205	35	50	50
	Zambia	comp.	78785	25	1	99
	Zimbabwe	comp.	444337	30	12	80
Total			1664205	32	33	85
<u>Americas</u>	Argentina	opt.	1800000	70	10	90
	Aruba (Neth.)	opt.		1	100	0
	Bahamas	opt.			100	0
	Barbados	opt.	50	10		
	Belize	opt.	17373	40		100
	Bermuda			5	100	
	Brazil	opt.	8165628	63		
	British Virgin Islands	comp., opt.	100	32	100	0
	Canada	opt.		50	40	0
	Chile	comp.	140853	16	2	98
	Colombia	comp.	1493465	43	10	90
	Costa Rica	opt.	50000	12	7	5
	Cuba	comp.	712874	91		100
	Ecuador	comp.	523181	30		30
	El Salvador	opt.	410000	58	3	98
	French Antilles	opt.	110		100	
	Grenada	opt.	4312	17	3	97
	Guatemala	comp.	302000	30		95
	Honduras	comp.	280267	57		100
	Jamaica					
	Mexico	opt.	5487561	50		100
	Nicaragua	opt.	120808	33	0	100

¹ Status - comp. - compulsory, and opt. - optional

ANNEX 2

VETERINARY VACCINE APPLICATION TO DOGS (Continued)

Continent	Country	Status	Number of dogs immunized	Coverage (in %)	% vaccinated priv.	public
	Panama	opt.	21176	9		9
	Paraguay	comp.	90412	40	10	
	Peru	comp.	266819	22		22
	St Kitts, W.I.					
	Suriname	opt.				
	Trinidad			1	100	0
	USA	comp., opt.				
	Venezuela	comp.				
	Total		19476989	34	46	57
<u>Asia</u>	Afghanistan	opt.				
	Bahrain	opt.	500	15	30	
	Bangladesh	opt.	3410	20	70	30
	Bhutan	opt.	363		0	
	China	comp., opt.	3840988	50		
	Hong Kong	comp.	35180	60	22	78
	India	opt.				
	Iran	opt.	10512			80
	Iraq	opt.				
	Israel	comp.	94807	70	60	40
	Japan	comp.	3691391	99	90	10
	Jordan	comp.	592	70	100	0
	Korea	comp.	308570	15	0	100
	Lebanon	opt.	3000	60	100	0
	Libya	comp.	6250	19		19
	Malaysia		3121		10	80
	Pakistan	opt.		10	10	90
	Qatar	opt.	323	40		100
	Saudi Arabia	opt.	30545			
	Singapore		0			
	Sri Lanka	opt.	236728	55	12	89
	Syria		100000	25	40	60
	United Arab Emirates	opt.				
	Total		8366280	43	42	55
<u>Europe</u>	Austria	comp.	84918		100	
	Belgium	comp., opt.	175000	50	100	
	Czechoslovakia	comp.	924090	90		100
	Denmark	opt.		5	100	0
	Finland	comp., opt.	43507	50	100	
	France	comp., opt.			100	
	Germany	opt.	3000000	60	98	0
	Gibraltar	comp.	1700	98	100	
	Greece	comp., opt.	70000	15	71	29
	Hungary	comp.	1499561	95		100
	Iceland					
	Ireland					
	Luxembourg	comp.	18000	80	100	

ANNEX 2

VETERINARY VACCINE APPLICATION TO DOGS (Continued)

Continent	Country	Status	Number of dogs immunized	Coverage (in %)	% vaccinated priv. public	
	Malta					
	Netherlands	opt.		100		
	Norway	comp.	50	100		100
	Poland	comp.	2956611	83	100	
	Portugal	comp.	660786	66	3	63
	Romania	comp.				
	Spain	comp.	1800000	70	60	40
	Sweden					
	Switzerland	comp.	400000	95	100	0
	United Kingdom				100	0
	USSR	comp.	8740620			100
	Yugoslavia	comp.	1077114		0	100
	Total		20130385	70	82	53
<u>Oceania</u>	Australia	opt.		0		
	French Polynesia	opt.		1	100	0
	Guam (USA)	comp.		40	100	0
	New Zealand		0	0		
	Papua New Guinea					
	Philippines	opt., comp.	487890	8		
	Samoa	opt.				
	Solomon Islands					
	Vanuato					
	Total		487890	29	100	0
	Total for the World		50125749			

Annex 4
Rabies trends in individual countries

