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# **Epidemiological Bulletin**

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## 1. POLIOMYELITIS

Thirty three (33) Acute Flaccid Paralysis cases were notified to the Epidemiology Unit during the 2nd quarter 2008. In comparison during the 2nd quarter of 2007 and 2006, 25 and 28 AFP cases were reported respectively. This number exceeds the expected number of AFP cases per quarter which is 28 according to WHO surveillance criteria. This number for the quarter or 112 AFP cases per year (according to the latest population data) makes up a non-polio AFP rate of 2 per every 100,000 under 15 year olds. The non - polio AFP rate for the 2nd quarter 2008 was 2.4 per 100,000 under 15 population.

### Notification of AFP Cases from Hospitals

Majority of the cases (10 i.e.30%) were notified from the main sentinel site for AFP, the Lady Ridgeway Children's Hospital (LRH), Colombo. LRH as a tertiary care center receives referrals from other hospitals in the country. Other hospitals that notified AFP cases in the 2nd quarter are as follows:

Hospital	No. of cases
LRH	10
TH Karapitiya	5
TH Peradeniya	2
GH Ratnapura	2
GH Polonnaruwa	2
GH Vavuniya	2
TH Jaffna	2
GH Moneragala	2
Oasis Hospital	1
TH Kandy	1
TH Colombo South	1
GH Badulla	1
TH Batticaloa	1
NHSL	1

### Distribution of AFP Cases by Provinces, Districts & MOH Areas

Ratnapura district in Sabaragamuva Province had the highest number of AFP cases reported from a district in the 2nd quarter. The number of cases reported from Ratnapura was 5 (15%). Colombo and Gampaha of the Western Province had 4 AFP cases (12%) reported each. Kalmunai and Ampara in the Eastern Province reported 1 AFP case each in the 2nd quarter. Mullaitivu (1), Kilinochchi (1) and Jaffna (2) from the Northern Province reported cases in this quarter. The complete list of distribution of AFP cases according to the province, district MOH area is given in Table 1.

Table 1

### GEOGRAPHICAL DISTRIBUTION OF AFP CASES 2<sup>ND</sup> QUARTER 2008

Province	District	MOH Area	Number of AFP cases	
Western	Colombo	CMC	1	
		Piliyandala	3	
	Gampaha	Minuwangoda	2	
		Dompe	1	
		Mahara	1	
Southern	Kalutara	Panadura	1	
		Galle	2	
	Matara	Baddegama	1	
		Hakmana	1	
		Weligama	1	
Central	Matale	Galewela	1	
		Nuwara Eliya	1	
	Sabaragamuva	Rikillagaskada	1	
		Ratnapura	2	
North Western	Kurunegala	Balangoda	1	
		Kolonna	1	
	Eastern	Kalmunai	Kuruwita	1
			Imbulpe	1
North Central	Ampara	Mawathagama	1	
		Samanthurai	1	
	Polonnaruwa	Dehiattakandiya	1	
Uva	Badulla	Elahera	1	
		Moneragala	2	
	Northern	Mullaitivu	Badulla	1
Punkuduthiruppu			1	
Jaffna		Kilinochchi	1	
	Malavi	1		
Northern	Jaffna	Delft	1	
		Punkuduthiv	1	

### Seasonal Distribution of AFP Cases

During the 2nd quarter 2008, the highest number of AFP cases were reported in the month of April (12 cases i.e.36%). In June, 11 (33%) cases were reported. May had 10 cases of AFP.

### Distribution of AFP Cases by Age and Sex

Majority of the AFP cases (14 i.e.42%) reported in the 2nd quarter 2008 were aged between 5-9 years. In comparison the majority of the AFP cases reported in the 2nd quarter 2007 were younger and between 1-4 years of age. In this quarter, ten (30%) children belonged to 1-4 year age group. Seven cases were aged between 10-14 years and another two were below 1 year of age.

Fifty two percent of the AFP cases in the 2nd quarter 2008 (17) were females. This is similar to the 2<sup>nd</sup> quarter 2007 where the majority of the cases were females (56%). Table 2 shows the age and sex distribution in 2nd quarter 2008.

Table 2

### DISTRIBUTION OF AFP CASES BY AGE AND SEX - 2<sup>ND</sup> QUARTER 2008

Age Group	Sex		Total
	Male	Female	
<1 year old	1	1	2
1-4 year old	6	4	10
5-9 year old	6	8	14
10-15 year old	3	4	7
Total	16	17	33

## Laboratory Surveillance of AFP Cases

Two stool samples collected within 14 days of the onset of paralysis are required at the Medical Research Institute for polio virology. According to WHO criteria these samples should be of 'good condition' as well as timely, being of correct quantity (8-10g), being sent in a leak proof container with no evidence of spillage or leakage and presence of ice in the container on receipt are the criteria to make the samples of 'good condition'.

Ninety three percent of cases out of the 33 AFP cases reported in the quarter had at least one stool sample sent to MRI for polio virology. No stool samples were received from both cases reported from Teaching Hospital Jaffna. Medical Research Institute received two timely stool samples from 26 cases (79%) out of the 33 AFP cases reported in the quarter for polio virology. This is lower than the timely stool collection rate (92%) achieved out of 25 AFP cases recorded in the respective quarter 2007.

## 2. CHOLERA

No confirmed cases of cholera were reported to the Epidemiology Unit during the 2<sup>nd</sup> quarter. Last case of cholera was reported in the country in January 2003.

## 3. TETANUS

During the 2<sup>nd</sup> quarter 2008, 08 tetanus cases were notified to the Epidemiology Unit. This is in comparison to 11 cases reported during the previous quarter and 10 cases in the corresponding quarter of 2007.

Eight cases were investigated and confirmed as tetanus during the current quarter, out of which one case (a patient above the age of 60 years) had been fatal. A case of neonatal tetanus was reported from Trincomalee during the quarter whose mother had received antenatal immunization with tetanus toxoid.

Table 3

### SELECTED CHARACTERISTICS OF CONFIRMED CASES OF TETANUS – 2<sup>ND</sup> QUARTER 2008

(N = 08)

Sex	Male	6
	Female	2
Age group	< 1	1*
	20-24	1
	35-39	3
	45-49	2
	>=60	1
District	Jaffna	3
	Kurunegala	3
	Trincomalee	1
	Nuwara Eliya	1
Immunization status	Immunized	2 *
	Non immunized	2
	Unknown	4

\* One neonatal tetanus case.

## 4. MEASLES

During the 2<sup>nd</sup> quarter 2008, 29 cases of measles were notified to the Epidemiology Unit compared to 31 cases notified during the previous quarter and 24 cases in the corresponding quarter of last year.

Ten (10) cases were investigated and confirmed as measles during the 2<sup>nd</sup> quarter 2008 (Table 4).

Table 4

### SELECTED CHARACTERISTICS OF CONFIRMED CASES OF MEASLES – 2<sup>ND</sup> QUARTER 2008

(N = 10)

Sex	Male	5
	Female	5
Age group	< 1	3
	1-5	1
	5-15	3
	>15	3
District	Ratnapura	1
	Puttalam	1
	Galle	1
	Kegalle	1
	Ampara	2
	Anuradhapura	1
	Kurunegala	1
	Colombo	1
	Matale	1
Immunization status	Immunized	2
	Non immunized	7
	unknown	1

## 5. LEPTOSPIROSIS

A total of 2033 cases were notified during the 2<sup>nd</sup> quarter of 2008. Very high reporting from high risk districts and unusually high case fatality rate were the notable features for this quarter. A large number of cases were reported from Matale (389), Kandy (202), Anuradhapura (190), Kalutara (187), Kegalle (149), Gampaha (142), Kurunegala (135), Matara (117), Galle (116) and Colombo (104).

Sentinel surveillance was carried out in 16 hospitals located in 9 districts. There were 1139 admissions of suspected cases of leptospirosis. Out of these cases, for 1097 cases (96%) notifications were made and for 779 cases (68%) special investigation forms were sent. The notification rate was satisfactory for all sentinel hospitals except for TH Colombo South (66%). However, the rate of sending special investigation was very poor for some sentinel hospitals like BH Panadura (14%), TH Peradeniya (31%), and TH Karapitiya (35%).

The sentinel hospitals also reported 59 deaths due to leptospirosis during the quarter; however laboratory confirmation was not available for most of these deaths. Out of these deaths, 40 were investigated. The case fatality rate was fairly high for TH Peradeniya (18%) and TH Colombo South (13%). It should be noted that as these hospitals are tertiary care institutions, in

addition to direct admissions, they also receive patients with severe complications from other hospitals.

## 6. HUMAN RABIES

Eight (08) cases of human rabies were notified to the Epidemiology Unit in the 2<sup>nd</sup> quarter 2008, compared to 16 cases in the previous quarter and 11 cases in the corresponding quarter of year 2007. Distribution of cases by district is given in Table 28.

### Animal Rabies

During the quarter 158 dogs were reported positive for rabies compared to 167 in the previous quarter and 198 in the corresponding quarter of 2007. In addition the following animals were also reported positive;

Cats-12, Domestic Ruminants-06

### Rabies Control Activities\*

**Domestic Dog vaccination** - A total of 224774 dogs were immunized during the 2<sup>nd</sup> quarter 2008 when compared to 183415 in the previous quarter and 224902 in the corresponding quarter of last year.

**Stary Dog vaccination** - A total of 36574 dogs were immunized during the 2<sup>nd</sup> quarter 2008 when compared to 24240 in the previous quarter and 31967 in the corresponding quarter of last year.

### Animal Birth Control

**Chemical** - 20888 stray female dogs were injected with birth control injections (Progesterone) during the quarter under review when compared to 33390 in previous quarter and 21139 in corresponding quarter of last year.

**Surgical** - 15002 female dogs were subjected to birth control surgeries during the quarter under review when compared to 5497 in previous quarter and 2275 in corresponding quarter of last year.

\*Source – Director/PHVS

## 7. ENTERIC FEVER

In the 2<sup>nd</sup> quarter 2008, a total of 496 cases of enteric fever were notified to the Epidemiology Unit, compared to 666 cases in the previous quarter and 372 cases in the corresponding quarter of 2007. The districts of Nuwara Eliya (97), Puttalam (83) and Jaffna (74) reported the highest number of cases. (Table 28).

The MOH areas Walapone (78), and Kalpitiya (72) notified a large number of cases during the quarter under review.

## 8. VIRAL HEPATITIS

In the 2<sup>nd</sup> quarter 2008, 500 cases of viral hepatitis were reported to the Epidemiology Unit, compared to 635 cases in the previous quarter and 2247 cases in the corresponding quarter of

2007.

Among the reported cases, 423 were investigated and confirmed as viral hepatitis. RDHS area Kegalle notified the highest number of cases (212) accounting for 42% of the total case load. The MOH areas Aranayaka (95 cases i.e. 19%) and Mawanella (77 cases i.e. 15%) in the Kegalle district have reported the highest number of cases.

## 9. DYSENTERY

In the 2<sup>nd</sup> quarter 2008, 1463 cases of dysentery were notified to the Epidemiology Unit, compared to 1358 cases in the previous quarter and 2358 cases in the corresponding quarter of 2007.

The MOH areas Badalkumbura(70), Dehiattakandiya (58), Bandarawela (37) and MC Galle (35) notified the highest number of cases.

## 10. JAPANESE ENCEPHALITIS (J.E.)

During the 2<sup>nd</sup> quarter 2008, 61 cases of Encephalitis were reported to the Epidemiology Unit. Among the reported cases, 33 (54%) were investigated and 8 were found to be clinically confirmed as JE. Among them three deaths were reported during the quarter (Table 5).

This is in comparison to 88 cases and one death reported during the previous quarter and 53 cases and one death reported in the corresponding quarter of 2007.

Table 5

### SELECTED CHARACTERISTICS OF CONFIRMED CASES OF JAPANESE ENCEPHALITIS – 2<sup>ND</sup> QUARTER 2008

(N = 8)		
Sex	Male	3
	Female	5
Age group	10-20	1
	20-30	2
	40-50	1
	60-65	4
District	Ratnapura	3
	Kalutara	2
	Galle	1
	Kurunegala	1
	Polonnaruwa	1
Immunization status	Immunized	0
	Non immunized	4
	unknown	4

## 11. MALARIA

During the 2<sup>nd</sup> quarter 2008, there was a significant reduction in the incidence of malaria in comparison to the same period of 2007 as seen in Table 6. Distribution of malaria cases by RMO division is shown in Table 7.

Source : Anti Malaria Campaign

Table 6

**RESULTS OF BLOOD SMEAR EXAMINATION FOR MALARIA PARASITES - 2<sup>ND</sup> QUARTER 2007/2008**

	2 <sup>nd</sup> Quarter 2007	2 <sup>nd</sup> Quarter 2008
No. of blood smears examined	249,292	246,192
No. of positives	65	25
No. of <i>P. vivax</i>	65	11
No. of <i>P. falciparum</i>	0	12
No. of mixed infections	0	2
No. of infant positives	0	1
Slide positivity rate (S.P.R.)	0.03%	0.01%
P.v. : P.f. ratio	65:0	1:1.3
Percentage of infant positives	0%	4.0%

Table 7

**DISTRIBUTION OF MALARIA CASES BY RMO DIVISION - 2<sup>ND</sup> QUARTER 2008**

RDHS Division	Blood smears	Positives	P.v.	P.f./ Mixed
Colombo	18610	0	0	0
Gampaha	9703	0	0	0
Kalutara	2326	0	0	0
Kandy	6610	0	0	0
Matale	3026	0	0	0
Nuwara Eliya	181	0	0	0
Galle	223	7	0	7
Matara	3934	3	0	3
Hambantota	6954	1	0	1
Jaffna	19953	0	0	0
Kilinochchi	6260	0	0	0
Mannar	4722	1	1	0
Vavuniya	11111	1	0	1
Mullaitivu	3947	0	0	0
Batticaloa	11409	0	0	0
Ampara	6248	1	1	0
Trincomalee	18098	6	6	0
Kurunegala	20009	1	1	0
Maho	8704	0	0	0
Puttalam	6747	0	0	0
Anuradhapura	28909	0	0	0
Polonnaruwa	12810	0	0	0
Badulla	10529	0	0	0
Moneragala	10010	0	0	0
Ratnapura	3593	1	1	0
Kegalle	1259	2	0	2
Kalmunai	10307	1	1	0
<b>TOTAL</b>	<b>246192</b>	<b>25</b>	<b>11</b>	<b>14</b>

P.v. - *Plasmodium vivax*P.f. - *Plasmodium falciparum*

Table 8

**MORBIDITY AND MORTALITY DUE TO DF/DHF - 2<sup>ND</sup> QUARTER 2008**

RDHS Division	Cases	Percentage	Deaths
Colombo	437	26.6	7
Gampaha	263	16.1	1
Kalutara	137	8.4	0
Kandy	64	3.9	0
Matale	33	2.0	0
Nuwara Eliya	9	0.6	0
Galle	29	1.8	0
Hambantota	15	0.9	0
Matara	67	4.1	0
Jaffna	20	1.2	0
Kilinochchi	0	0.0	0
Mannar	5	0.3	0
Vavuniya	0	0.0	0
Mullaitivu	0	0.0	0
Batticaloa	29	1.8	0
Ampara	13	0.8	0
Trincomalee	48	2.9	1
Kurunegala	67	4.1	0
Puttalam	85	5.2	0
Anuradhapura	25	1.5	0
Polonnaruwa	27	1.7	0
Badulla	29	1.8	0
Moneragala	17	1.0	0
Ratnapura	47	2.9	0
Kegalle	156	9.5	0
Kalmunai	17	1.0	0
<b>TOTAL</b>	<b>1639</b>	<b>100.0</b>	<b>9</b>

## 12. DENGUE FEVER (D.F.)/ DENGUE HAEMORRHAGIC FEVER (D.H.F.)

During the 2<sup>nd</sup> quarter 2008, 1639 cases of DF/DHF and 9 deaths were reported (CFR 0.55%) when compared to 2164 cases and 7 deaths (CFR 0.3%) reported during the previous quarter and 905 cases and 3 deaths (CFR 0.33%) reported during the corresponding quarter of last year.

Table 8 shows the distribution of DF/DHF cases and deaths in the RDHS divisions during the quarter.

Special surveillance data on 561 confirmed cases were received and analysed for the second quarter 2008. Of the total cases reported, the majority (43%) were in April and then June (25%).

Seventy eight percent (78%) of the cases were from the Western Province with Colombo, Gampaha and Kalutara districts contributing to 42%, 14% and 12% respectively. All other districts contributed to less than 10% each.

Age distribution of reported cases showed that 180 cases (29%) were below 15 years of age. Majority of the cases 265 (47%) were between 15-39 years of age and 13 (24%) were aged 40 years or above.

According to the clinical findings, majority of the reported cases (85%) were classified as Dengue Fever. Fifteen percent (15%) were classified as DHF with 3% and 10% falling into DHF1 and DHF II categories respectively.

During the 2<sup>nd</sup> quarter 2008, 1083 blood samples were tested using Ig M capture ELISA test and Haemagglutination Inhibition test at the Department of Virology, MRI and 301 samples were confirmed as positive (Table 9).

Table 9.

### DHF STATISTICS FROM DEPARTMENT OF VIROLOGY, MRI - 2<sup>ND</sup> QUARTER 2008

Month	Clinically Suspected	Serologically confirmed
April	505	107
May	224	61
June	354	133
Total	1083	301

## 12.1 ENTOMOLOGICAL SURVEILLANCE OF DENGUE VECTORS

Results of the entomological surveillance carried out by the Medical Research Institute and Entomological Unit, Western Province, in selected MOH areas of Colombo and Gampaha districts, for the 2<sup>nd</sup> quarter 2008 are given in Table 10.

Surveillance activities were carried out in locations identified as 'high-risk' by the respective MOOH and action was taken to eliminate the breeding sites detected.

Breteau Index

$$= \frac{\text{No. of Positive containers} \times 100}{\text{No. of premises inspected}}$$

Table 10

### AEDES LARVAL DENSITIES (BRETEAU INDEX) IN COLOMBO AND GAMPAHA DISTRICTS - 2<sup>ND</sup> QUARTER 2008

MOH Area	April		May		June	
	A	B	A	B	A	B
Moratuwa	12.0	15.4	9.0	19.0	6.8	4.6
Nugegoda	16.0	20.0	6.7	8.7	4.0	0
Kaduwela	4.4	45.0	5.3	32.0	6.4	28.8
Maharagama	10.0	17.0	1.5	13.0	-	-
Piliyandala	6.0	26.0	1.0	12.8	1.5	12
Panadura	6.0	22.5	7.0	17.0	0.5	18.5
Ragama	1.2	29.2	4.3	13.5	0	8.5
Ja-Ela	6.4	9.5	12.15	10.28	2.6	12.8
Kelaniya	4.5	17.8	7.2	25.0	6.0	21.3

(A) = *Aedes aegypti*

(B) = *Aedes albopictus*

Number of premises examined per area = 300

### 13. TUBERCULOSIS

A total of 2545 tuberculosis patients were registered for 2<sup>nd</sup> quarter 2008 by the National Programme for Tuberculosis Control and Chest Diseases. Of this total, 2010 suffered from pulmonary disease, and the balance, 535 patients from non-pulmonary disease. Of these patients 1321 were bacteriologically confirmed with a bacteriological confirmation rate of 65.72%. The distribution of tuberculosis patients by RDHS division is given in Table 11.

#### B.C.G. vaccination

A total of 91827 B.C.G. vaccinations were carried out during the quarter with 95.98% coverage.

Table 11.

**TUBERCULOSIS PATIENTS BY RDHS DIVISIONS - 2<sup>ND</sup> QUARTER 2008**

RDHS DIVISION	PTB	EPT B	Total	Pulmonary TB Direct Smear	
				No. +VE	%
Colombo	424	86	510	325	76.7
Gampaha	214	55	269	161	75.2
Kalutara	122	46	168	95	77.9
Kandy	138	45	183	83	60.1
Matale	52	44	96	30	57.7
Nuwara Eliya	39	8	47	26	66.7
Galle	135	37	172	98	72.6
Hambantota	26	11	37	13	50.0
Matara	53	11	64	28	52.8
Jaffna	95	12	107	29	30.5
Vavunia	13	4	17	10	76.9
Kilinochchi	16	2	18	9	56.3
Mannar	8	2	10	5	62.5
Mullativu	9	2	11	9	100.0
Ampara	38	7	45	19	50.0
Batticaloa	23	9	32	8	34.8
Trincomalee	56	1	57	27	48.2
Kurunegala	103	28	131	61	59.2
Puttalam	30	5	35	19	63.3
Anuradhapura	80	27	107	52	65.0
Polonnaruwa	31	7	38	24	77.4
Badulla	62	14	76	43	69.4
Monaragala	29	5	34	15	51.7
Kegalle	64	28	92	49	76.6
Ratnapura	82	35	117	66	80.5
Kalmunai	68	4	72	17	25.0
<b>Total</b>	<b>2010</b>	<b>535</b>	<b>2545</b>	<b>1321</b>	<b>65.7</b>

PTB-Pulmonary Tuberculosis

EPTB- Extra Pulmonary Tuberculosis

Data from Central TB Register

### 14. SURVEILLANCE AT SEA PORT

Surveillance activities carried out by the Port Health Office at Colombo Sea Port during the 2<sup>nd</sup> quarter 2008, is given below.

<b>1. Yellow Fever Vaccination</b>	<b>Total</b>
Total number vaccinated	- 28
<b>2. Granting Pratique to Vessels</b>	
Number issued	- 114
<b>3. Deratting Certification</b>	
Number issued	- 33

Details of the vaccinations carried out by the Assistant Port Health Office, Colombo 8, during the 2<sup>nd</sup> quarter 2008, is given below.

	<b>Total</b>
a. Yellow fever	730
b. Meningococcal meningitis	80

### 15. SURVEILLANCE AT AIRPORT

Surveillance activities carried out at the International Airport, Katunayake during the 2<sup>nd</sup> quarter 2008 is given below.

#### 1. Yellow Fever Surveillance

a. No. with valid certificate	- 23
b. No. without valid certificate & Departed	- -
c. No. without valid certificate Isolated	- -

#### 2. Airport Sanitation

a. No. of sanitary inspections carried out including food establishments	- 29
b. No. of food samples taken under Food Act	- 05
c. No. found defective	- 0
d. No. of court cases/prosecuted/warned	- 0
e. No. of water samples tested	- 09
f. No. reported contaminated	- 0

#### 3. Release of human remains

a. No. of human remains released	- 90
b. No. referred to JMO for post-mortem	- 09
c. No. alleged suicide	- 06

#### 4. Other Health Activities

a. Polio Vaccination No. of doses given	- 62
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## 16. LEPROSY

### QUARTERLY RETURN OF LEPROSY STATISTICS - 2<sup>ND</sup> QUARTER 2008

Table 12.

#### 1. National

	At the end of the quarter			Cumulative for end of the quarter		
	2 <sup>nd</sup> quarter 2008	2 <sup>nd</sup> quarter 2007	Diff. (%)	2 <sup>nd</sup> quarter 2008	2 <sup>nd</sup> quarter 2007	Diff. (%)
New patients detected	430	470	-8.5	822	856	-3.97
Children	44	42	4.8	94	83	13.3
Grade 2 Deformities	39	25	56	68	51	33.3
Multi-Bacillary	198	207	-4.3	357	386	-7.5
Females	173	212	-18.4	320	377	-15.1

#### 2. Districts

District	New patients	Deformities	Child	MB	Females
Colombo	90	1	12	36	35
Gampaha	53	3	3	25	23
Kalutara	43	4	3	18	15
<b>Western</b>	<b>186</b>	<b>8</b>	<b>18</b>	<b>79</b>	<b>73</b>
Galle	11	0	1	2	5
Matara	19	1	3	5	8
Hambantota	20	3	2	8	5
<b>Southern</b>	<b>50</b>	<b>4</b>	<b>6</b>	<b>15</b>	<b>18</b>
Kandy	7	1	1	2	4
Matale	3	1	0	2	1
Nuwara Eliya	2	0	0	2	0
<b>Central</b>	<b>12</b>	<b>2</b>	<b>1</b>	<b>6</b>	<b>5</b>
Anuradhapura	12	2	0	6	6
Polonnaruwa	17	3	4	8	9
<b>North Central</b>	<b>29</b>	<b>5</b>	<b>4</b>	<b>14</b>	<b>15</b>
Kurunegala	34	7	2	28	14
Puttalam	9	1	0	6	11
<b>North Western</b>	<b>43</b>	<b>8</b>	<b>2</b>	<b>34</b>	<b>17</b>
Kegalla	6	1	0	4	2
Ratnapura	32	3	1	18	12
<b>Sabaragamuwa</b>	<b>38</b>	<b>4</b>	<b>1</b>	<b>22</b>	<b>14</b>
Badulla	6	1	1	4	2
Moneragala	7	1	0	1	5
<b>Uva</b>	<b>13</b>	<b>2</b>	<b>1</b>	<b>5</b>	<b>7</b>
Trincomalee	3	1	0	3	0
Batticaloa	33	1	6	10	17
Ampara	9	2	1	4	3
Kalmunai	13	2	4	5	4
<b>Eastern</b>	<b>58</b>	<b>6</b>	<b>11</b>	<b>22</b>	<b>24</b>
Jaffna	0	0	0	0	0
Vavuniya	1	0	0	1	0
Mannar	0	0	0	0	0
Mullativu	0	0	0	0	0
Kilinochchi	0	0	0	0	0
<b>Northern</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>
<b>Sri Lanka</b>	<b>430</b>	<b>39</b>	<b>44</b>	<b>198</b>	<b>173</b>

Source : Anti Leprosy Campaign



**17. ANTIBIOTIC SENSITIVITY PATTERN OF ENTERIC PATHOGENS ISOLATED IN MEDICAL RESEARCH INSTITUTE - 2ND QUARTER 2008**

Table 13.

Organism	Number Positive	Ampicillin		Chloramphenicol		Ciprofloxacin		Cortrimo-zole		Ceftriaxone		Cefotaxime		Erythromycin		Furozolidone		Nalidixic Acid					
		S	I	R	S	I	R	S	I	R	S	I	R	S	I	R	S	I	R	S	I	R	
Compylobacter jejuni	5	100	100	100	100	60	25	75	100	100	100	100	100	100	100	20	80						
Compylobacter species	3			100		100		100								66	33						
EPEC	1					100		100								100							
Salmonella group D	1																						
Salmonella group E	2					100		100								50	50	100					
Salmonella paratyphi A	3	50	50	100				100							100						100		
Salmonella typhi	1			100	100																	100	
Shigella flexneri II	4					100		100															100
Shigella flexneri VI	1					100		100															100
Shigella sonnei	6					100		100								50	50	100					100

S - Sensitive I - Intermediate Sensitivity R - Resistance

## 18. SEXUALLY TRANSMITTED DISEASES

Table 14.

### NEW EPISODES OF STD/HIV/AIDS REPORTED OR TREATED AT STD CLINICS IN SRI LANKA\* - 2<sup>ND</sup> QUARTER 2008

Disease	New cases or new disease episodes during the quarter			Total new cases or new episodes for the calendar year up to end of the quarter **		
	Male	Female	Total	Male	Female	Total
HIV positives <sup>1</sup>	16	7	23	27	12	39
AIDS	4	2	6	5	3	8
Early Syphilis <sup>2</sup>	11	8	19	29	16	45
Syphilis	61	56	117	131	117	248
Late Syphilis <sup>3</sup>						
Congenital Syphilis <sup>4</sup>	0	1	1	1	1	2
Gonorrhoea <sup>5</sup>	78	48	126	171	87	258
Ophthalmia neonatorum <sup>6</sup>	1	1	2	2	2	4
Non specific cervicitis/urethritis	141	237	378	272	517	789
Chlamydial Infection	12	14	26	27	30	57
Genital Herpes	161	256	417	389	539	928
Genital Warts	170	116	286	325	229	554
Chancroid	0	0	0	0	0	0
Trichomoniasis	3	32	35	10	71	81
Candidiasis	208	336	544	456	685	1141
Bacterial Vaginosis		215	215		434	434
Other sexually transmitted diseases <sup>7</sup>	89	24	113	176	57	233
Non-venerial <sup>8</sup>	891	645	1536	1749	1397	3146

\* - Central STD clinic Colombo and peripheral STD clinics of National STD/AIDS Control Programme of Sri Lanka

\*\* - includes adjustments for revised diagnosis, reporting delays or any other amendments

<sup>1</sup> - includes AIDS cases

<sup>2</sup> - diagnosed within 2 years of infection and considered to be infectious

<sup>3</sup> - diagnosed after 2 years of infection and considered to be non-infectious

<sup>4</sup> - includes both early and late cases

<sup>5</sup> - includes presumptive Gonorrhoea

<sup>6</sup> - includes both gonococcal and chlamydial conjunctivitis in neonatal period

<sup>7</sup> - includes Lympho granuloma venerium, Granuloma inguinale, Molluscum contagiosum, Scabies, Tinea, Hepatitis B etc.

<sup>8</sup> - number of STD clinic attendees who were not having sexually transmitted diseases.

## 19. SURVEILLANCE REPORT ON AEFI – 2ND QUARTER 2008

Data presented in Table 15 and Table 16 provide an analysis of selected adverse events reported up to the end of 2nd quarter 2008 inclusive of 1st quarter figures as reported in the 2008 1st Quarter Bulletin and selected indicators of reporting quality. There was no significant difference in the data when compared to the 1st quarter 2008 except for the added numbers of AEFI reported during 2nd quarter 2008. However the rate of occurrence of AEFI per 100,000 immunizations of pentavalent vaccine has increased from 197.3 at the end 1st quarter to 238.4 at the end of 2nd quarter 2008. The reason for this increase was the late reporting of some AEFI due to this vaccine even after the suspension of it on 29th April 2008.

There was no major shift in indicators of overall completeness, timelines and percentage of “Nil”

returns received. At national level overall AEFI rate has reduced marginally from 98.5 per 100,000 immunizations in 1<sup>st</sup> quarter to 93.3 at the end of 2nd quarter. There was a marked reduction in reported AEFI rate from Hambantota and Monaragala RDHS from 452.7 and 208.1 in 1<sup>st</sup> quarter 2008 to 326.8 and 183.3 per 100,000 immunizations at the end of 2<sup>nd</sup> quarter 2008 respectively. In other districts there was only a marginal increase or decrease in indicators as well as rate of reporting.

However, another significant finding was the reporting of eight deaths temporally related to vaccines during the 2<sup>nd</sup> quarter 2008. Out of them two deaths were following Pentavalent and OPV vaccine and five deaths were following DPT/HBV/OPV vaccines. This was a highly unusual phenomenon observed during this year in comparison to previous years and detailed investigations are underway to ascertain the causality of these deaths and to find out any possible link to vaccine.

Table 15.

**NUMBER AND RATE OF SELECTED AEFI REPORTED BY VACCINE AND BY TYPE OF AEFI - 2<sup>ND</sup> QUARTER 2008**

Vaccine	Seizure	Allergic Reactions	Abscess	Severe Local Reactions	High Fever	Lymphadenitis	Hypotonic Hyporesponsive Episodes	Meningitis	Encephalitis	Encephalopathy	Nodule	Guillain - Baire Syndrome	Paralytic	Arthralgia	Death	Anaphylactic Shock	Persistent Screaming	Others	Total	Rate 100,000 doses
BCG	0	1	11	2	2	8	0	0	0	0	0	0	0	0	0	0	0	0	24	13.8
Penta	20	79	18	24	194	0	24	1	0	0	23	0	0	9	5	0	45	6	448	238.4
DPT	156	277	356	200	866	0	4	3	1	1	225	1	0	18	8	1	60	2	2179	414.7
OPV	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0.2
Measles	8	59	2	1	17	0	0	0	0	0	1	0	0	0	0	0	0	0	88	47.9
DT	11	20	7	12	19	0	0	0	0	0	3	0	0	0	0	0	0	1	73	38.9
TT	0	25	0	11	0	0	0	0	0	0	2	0	0	0	0	1	0	0	39	22.2
Rubella	0	90	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	95	53.2
JE	8	56	1	1	33	0	0	0	0	0	0	1	0	1	0	0	2	2	105	39.2
aTd	2	6	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	12	8.2
Hep	0	2	4	1	2	0	0	0	0	0	2	0	0	0	0	0	1	0	12	3.5
MR	2	81	1	3	18	0	0	0	0	0	0	0	0	0	0	0	1	0	106	68.8
Others	1	2	4	1	0	0	0	0	0	0	4	0	0	0	0	0	0	0	12	-
Total	208	699	405	262	1153	8	28	4	1	1	260	2	1	28	13	2	109	11	3195	93.3

Table 16.

**COMPLETENESS AND TIMELINESS OF MONTHLY REPORTING AND RECEIPT OF "NIL" REPORTS OF AEFI BY RDHS DIVISIONS - 2<sup>ND</sup> QUARTER 2008**

RDHS Division	(% Complete-ness	(% Timeliness	(% "Nil" Re-returns	Reported AEFI	
				Number	Rate *
Colombo	96.4	35.8	11.1	225	69.4
Gampaha	100.0	40.5	8.3	251	74.9
Kalutara	98.6	29.6	29.6	170	81.9
Kandy	97.9	39.7	12.8	351	164.2
Matale	100.0	18.1	52.8	81	93.5
Nuwara Eliya	97.4	44.7	43.4	90	75.1
Galle	98.0	32.0	62.0	65	37.5
Hambantota	100.0	31.8	7.6	336	326.8
Matara	100.0	56.9	54.9	63	47.2
Jaffna	100.0	11.9	57.1	76	83.6
Kilinochchi	94.4	0.0	88.2	4	10.7
Mannar	87.5	23.8	85.7	3	23.1
Vavuniya	100.0	29.2	79.2	14	60.9
Mullativu	100.0	6.7	70.0	5	15.8
Batticaloa	100.0	33.3	37.9	146	128.5
Ampara	100.0	9.5	28.6	73	151.6
Trincomalee	98.3	45.8	72.9	48	58.3
Kurunegala	99.1	43.9	23.4	237	76.5
Puttalam	100.0	38.9	35.2	86	56.9
Anuradhapura	97.4	42.3	47.7	121	69.8
Polonnaruwa	100.0	61.9	42.9	54	74.4
Badulla	100.0	70.0	27.8	242	183.3
Moneragala	100.0	53.0	24.2	141	186.1
Ratnapura	96.9	36.6	46.2	120	77.3
Kegalle	98.5	63.1	15.4	151	119.3
Kalmunai	100.0	37.2	66.7	42	46.7
<b>Sri Lanka</b>	<b>98.7</b>	<b>39.6</b>	<b>38.2</b>	<b>3195</b>	<b>93.3</b>

\* Rate Per 100,000 immunizations

## 20. REPORT ON PNEUMOCOCCAL & HIB SURVEILLANCE 2005 – JUNE 2008

### BACKGROUND:

Pneumococcal disease is one of the leading vaccine preventable causes of death worldwide. It is estimated that pneumococcal disease attributes to about 1.6 million deaths including more than 800000 children less than five years of age annually. Most of these deaths occur among neonates with the highest number being witnessed in those less than 3 months of age. The largest number of deaths occurs in the developing world surpassing all deaths attributable to other infectious diseases. Worldwide, it is the most common cause of bacterial pneumonia and

most severe cause of bacterial meningitis in children under five years.

*Haemophilus influenzae type B* (Hib) is also an important cause of infections in infants and young children. World Health Organization (WHO) estimates that around 400,000 children die each year of Hib disease. Hib is consistently the leading cause of childhood bacterial meningitis.

The increasing trend of resistance of *Streptococcus pneumoniae* to antibiotics all over the globe has made treating pneumococcal disease less effective and treatment cost soaring. Although common and often serious, pneumococcal and Hib diseases are largely preventable through safe and effective vaccines. In recognition of the potential of the vaccine to prevent the disease, the World Health Organization (WHO) has recommended vaccination against pneumococcal

Table 17.

NUMBER OF BLOOD AND CSF SPECIMENS COLLECTED WITH LATEX ANTIGEN TEST POSITIVES AND CULTURE POSITIVES FOR STREPTOCOCCUS PNEUMONIAE AND HAEMOPHILUS INFLUENZAE

Year/ month	Blood cultures				Cerebro-spinal fluid (Cultures)				Cerebro-spinal fluid (Latex test)				No of children		
	No of blood cultures	Positive for <i>S.Pneumoniae</i>	Positive for <i>Haemophilus influenzae</i>	Positive for <i>Haemophilus influenzae b</i>	Total CSF samples	Positive for <i>S.Pneumoniae</i>	Positive for <i>Haemophilus influenzae</i>	Positive for Hib	No tested with Latex antigen	Positive for <i>S.Pneumoniae</i>	Positive for <i>Haemophilus influenzae</i>	Positive for <i>Haemophilus influenzae b</i>	Positive for <i>S.Pneumoniae</i>	Positive for <i>Haemophilus influenzae</i>	Positive for <i>Haemophilus influenzae b</i>
<b>2005</b>	1398	08	15	14	430	01	05	00	312	07	25	25	18	36	35
<b>2006</b>	1686	10	18	16	361	04	11	00	338	03	16	15	16	29	27
<b>2007</b>	1113	10	15	00	257	01	05	00	236	06	14	00	19	26	00
<b>2008 Jan</b>	47	02	00	00	10	03	00	00	08	03	00	00	05	00	00
<b>Feb</b>	35	00	01	00	09	00	00	00	07	01	01	00	01	02	00
<b>Mar</b>	24	01	00	00	07	00	00	00	07	01	00	00	02	00	00
<b>Apr</b>	22	00	00	00	05	00	00	00	03	00	00	00	00	00	00
<b>May</b>	22	00	00	00	03	00	00	00	00	00	00	00	00	00	00
<b>June</b>	20	00	01	00	01	00	00	00	00	00	00	00	01	02	00
<b>Total</b>	<b>4367</b>	<b>31</b>	<b>50</b>	<b>30</b>	<b>1083</b>	<b>09</b>	<b>21</b>	<b>00</b>	<b>911</b>	<b>21</b>	<b>56</b>	<b>40</b>	<b>62</b>	<b>95</b>	<b>62</b>

Table 18

**DISTRIBUTION OF PNEUMOCOCCAL SERO-TYPES DETECTED IN SRI LANKA**

Serotype	Number	Percentage (%)
19 F	8	22.2
23F	6	17
6B	5	14
14	4	11
15b	3	8.3
3	2	5.5
38	2	5.5
Non Typeable	2	5.5
16	1	2.7
20	1	2.7
29	1	2.7
35,42	1	2.7
<b>Total</b>	<b>36</b>	<b>100</b>

and Hib diseases through the National Immunization Programmes (NIP) as a priority for developing countries. Further, it has been suggested that countries need to assess their pneumococcal and Hib disease burden and circulating pneumococcal strains through surveillance in order to make decisions regarding the introduction of vaccine to the NIP.

Although there is an information gap pertaining to pneumococcal disease in Sri Lanka, according to inpatient data, lower respiratory tract infections and meningitis continue to be a leading cause of morbidity and mortality in Sri Lanka. In a population based study conducted by the Epidemiology Unit in 2004 in the district of Colombo, the incidence of meningitis was found to be 90.5 cases per 100 000 children under five years of age and Hib meningitis accounted for

20.1 cases per 100 000 children under five years of age. This occurs against the background of a readily existing package of interventions including immunization against childhood tuberculosis and measles aimed at controlling child morbidity and mortality related to respiratory tract infections. Another progressive measure in the direction of further reducing child morbidity and mortality was the introduction of Hib vaccine at the beginning of the year 2008. The subsequent and logical step in this direction appears to be the introduction of the pneumococcal vaccine. However, considering the fact that the Sri Lankan NIP is a self funded one and the cost of new vaccines is high, decision makers want ample evidence to make appropriate choice of new vaccines for the NIP. Bearing in mind that there is a need to bridge the information gap in this regard, Sri Lanka has initiated pneumococcal surveillance in Sri Lanka with a view to providing comprehensive information to national policy and decision makers to assist them in formulation of policy pertaining to control and prevention of Pneumococcal disease. Hib surveillance is also maintained in the period of post Hib vaccine implementation to appraise the impact of vaccination on the incidence of Hib disease and mortality.

**Hib & PNEUMOCOCCAL SURVEILLANCE IN SRI LANKA**

Sri Lanka has been a partner in the South Asian Pneumococcal Network Alliance (SAPNA) since 2003. This project has been coordinated by the International Clinical Epidemiology Network (INCLEN) and School of Public Health of the Johns Hopkins University. Monetary support for the project is provided by the Global Alliance for Vaccines and Immunizations (GAVI) through the Pneumococcal Accelerated Development and Implementation (Pneumo ADIP). Epidemiology Unit of the Ministry of Health Care and Nutrition coordinates pneumococcal surveillance activities in Sri Lanka. Microbiology laboratory at the Lady Ridgeway Hospital (LRH), the premier children's hospital in the country, functions as the SAPNA laboratory in Sri Lanka. LRH, Colombo South Teaching Hospital, Colombo North Teaching Hospital, National Institute of Health Sciences and Teaching Hospital Karapitiya currently function as sentinel surveillance sites. Hib surveil-

Table 19

**ANTIBIOTIC OF SENSITIVITY PATTERN OF ISOLATED S. PNEUMONIAE**

Antibiotics	Sensitive	Intermediate Resistance	Resistance
Penicillin	3(9%)	19(58%)	11(33%)
Co trimoxazole	10(30%)	2(6%)	21(64%)
Chloramphenicol	24(72%)	0	9(28%)
Erythromycin	11(33%)	1(3%)	21(64%)

lance activities are supported by the Hib initiative through the World Health Organization. The objectives of Hib and pneumococcal surveillance are as follows:

#### GENERAL OBJECTIVE:

To generate comprehensive local epidemiological data on invasive pneumococcal and Hib disease in Sri Lanka

#### SPECIFIC OBJECTIVES

- To expand and strengthen Pneumococcal and Hib surveillance in Sri Lanka with a view to enhancing the capacity for national surveillance of vaccine preventable diseases
- To sustain on going Pneumococcal and Hib surveillance in Sri Lanka and further enhance the capacity of the Microbiology laboratory at the LRH
- To determine serotype distribution of *Streptococcus pneumoniae* in Sri Lanka
- To describe antimicrobial resistance of isolated *Streptococcus pneumoniae* in Sri Lanka
- To assess the effectiveness of Hib vaccine in mitigating the Hib disease burden & mortality in Sri Lanka.
- To provide comprehensive information to National policy and decision makers to assist them in formulation of policy pertaining to control and prevention of Pneumococcal disease

#### RESULTS OF PNEUMOCOCCAL AND HIB SURVEILLANCE:

Results of Pneumococcal and Hib surveillance carried out at the LRH and sentinel sites are given in Table 17.

4767 children under 5 years of age, compatible with case definitions of pneumonia, sepsis and meningitis were included in the surveillance. During this period, 4367 blood specimens were taken for cultures and 1083 samples of cerebrospinal fluids (CSF) were cultured. Of these 1083 specimens of CSF, latex antigen detection test was performed on 911 CSF samples (84.1%).

Latex test positivity rate (positives test results for 100 tests performed) for *S.pneumoniae* was 2.3% while the same for *Haemophilus influenzae* and *Haemophilus influenzae b* were 6.1% and 4.4%. *Streptococcus pneumoniae* yields were 0.7 per 100 blood cultures and 0.8 per 100 CSF cultures. Corresponding figures for *Haemophilus influenzae* were 1.1 per 100 blood cultures and 2.3 per 100 CSF cultures. *Haemophilus influenzae b* isolation rate from blood cultures was 0.68 per 100 blood cultures. No isolates of Hib from CSF were obtained during the surveillance period. What is noteworthy is the higher detection of pathogens from CSF cultures and by latex antigen tests than yields from the blood. It is essential to highlight the fact that among suspected meningitis cases, only 21 *Haemophilus influenzae* cases had been iso-

lated while not a single Hib pathogen had been isolated by culturing. However, 56 and 40 CSF specimens were tested positive for Hi and Hib respectively when latex antigen detection test was used for confirmation of aetiology.

Overall, the Pneumococcal disease rate was 1.3 per 100 clinically suspected patients (pneumonia, sepsis or meningitis) while the same for *Haemophilus influenzae* and *Haemophilus influenzae b* were 2.0 per 100 patients and 1.3 per 100 patients respectively.

Two hundred sixty five specimens other than blood and CSF (sputum, peritoneal fluid etc) were also tested. Of them six were positive for *S.pneumoniae* (2.3%) and four were positive for *H. influenzae* (1.5%).

Isolated *S.pneumoniae* were sent to the pneumococcal reference laboratory (Christian Medical College, Vellore, India) for serotyping. Distribution of detected sero-types is given in the table 18.

So far results of 36 isolates have been received. The commonest serotypes isolated were 19F (22.2%), 23F (17%) and 6B (14%). Sixty four percent of serotypes found in Sri Lanka are covered in the seven-valent conjugated pneumococcal vaccine.

#### ANTIBIOTIC SENSITIVITY PATTERN:

Antibiotic sensitive pattern of isolated *Streptococcus pneumoniae* is given in the Table 19.

Seventy two percent of isolates were sensitive to Chloramphenicol where as only nine percent were sensitive to Penicillin.

#### KEY FINDINGS OF SURVEILLANCE:

Pathogens were isolated in higher rates from CSF than from blood. This may be partly due to prior treatment with antibiotics which prevents the growth of organisms in blood cultures and to a lesser extent in CSF. Prior use of antibiotics was further reflected in higher positive rates of pathogens for antigen detection tests in CSF.

Estimates of invasive pneumococcal and Hib diseases based on culture alone are under estimates. For better estimates, it is essential to use more sensitive Latex antigen tests.

*Haemophilus influenzae* was more frequently detected than *Streptococcus pneumoniae* in meningitis cases.

*Haemophilus influenzae* was more frequently isolated among pneumonia and sepsis patients. However, similar rates of detection were observed for Hib and *S. pneumoniae*.

Observed antibiotic resistance pattern has influenced change of antibiotic prescribing practice at the LRH for treating invasive pneumococcal disease.

Currently used 7 valent pneumococcal conjugated vaccine (PCV) may be appropriate for Sri Lanka based on surveillance data so far (coverage-64%)

## 21. SURVEILLANCE REPORT ON HUMAN RABIES – 2007

Human rabies is a notifiable disease in Sri Lanka. The number of human rabies deaths declined from 136 in 1991 to 68 in 2006 (Table 20 and 26). Fifty five (55) cases of human rabies were reported through the routine notification system and all were investigated in 2007 (Table 20). The distribution of notification and confirmed cases of human rabies cases by RDHS divisions is given in Table 21. In 2007, the highest number of cases (08) was notified in RDHS divisions Gampaha and Kurunegala. The RDHS divisions Batticaloa (06), Galle (05), Anuradhapura (3) and Ratnapura (3) also notified a higher number of cases.

### Age and Sex Distribution

The age distribution of investigated / confirmed cases of rabies for the year 2007 is given in Table 22. The highest percentage of 63.6% (35 cases) occurred in the age group 20-59 years. The next highest percentage of 20% (11 cases) occurred in age group 60 years and over followed by the 5-19 year age group with 10.9% (6 cases). Zero cases were reported in children less than 1 year of age. Similar pattern of age distribution was shown during the period 2000 – 2005, where the age group 20-59 years was the most affected, but it was noted that the elderly age group (>60 years) has emerged as a vulnerable age category since 2004, 2005 and 2006. Reported male: female ratio of 2:1 (approximately) highlights the increased susceptibility of males. (Table 23)

### Exposure Information

According to data analyzed through detailed investigation reports on confirmed rabies cases, 38% (21 cases) human rabies were due to bites by the stray dogs with 36% (20) of which the source of infection was unknown. Dog is the main reservoir 81% (45 cases) as well as the transmitter of rabies in the country (Table 24 & 25).

Since the National Rabies Control Programme (NRCP) commenced in 1975, animal vaccination and elimination activities were strengthened to a greater extent; dog vaccination has increased significantly from 1975 to 2004, but in 2005 there was a slight drop (Table 26). Since 2006 the dog vaccination started to increase. It is important to maintain the dog vaccination strategy as a control measure with a view to eliminating animal rabies. At least around one third of human rabies cases were due to household / neighbours' animals, which show high susceptibility and poor vaccination practices among household animals and the lack of responsibility of the dog owners. Routine dog vaccination is essential. It not only protects the animal, but also makes the public less susceptible. It also helps to arrest the transmission of virus among the animal too. However, partial and ad hoc dog vaccination practice may lead to an increase in

the risk of rabies, particularly due to the false trust on the safety of the animal. Epidemiological investigation has revealed that in some cases post exposure treatment (PET) was not taken or not given assuming that the animal was immunized, but actually the animal has not been vaccinated completely and thereby not protected. Though the public support for dog vaccination is

Table 20.

**MORTALITY AND NOTIFICATION OF HUMAN RABIES CASES – 1991- 2007**

Year	No. of suspected cases notified ■	Cases Confirmed	
		Number	* Rate
1991	133	136	0.79
1992	112	112	0.64
1993	104	98	0.55
1994	122	105	0.58
1995	178	124	0.68
1996	195	110	0.59
1997	150	135	0.72
1998	123	111	0.59
1999	194	110	0.58
2000	132	109	0.56
2001	105	83	0.43
2002	78	64	0.33
2003	86	76	0.39
2004	97	98	0.5
2005	55	55	0.3
2006	74	68	0.37
2007	55	55	0.33

Sources - Rabies Control Programme (PHVS)

■ Epidemiology Unit (H399 & H411 and Special Investigation forms).

\* Rate per 100,000 population.



remarkable, there is a tendency of resistance for dog elimination, particularly from the animal lovers. Similar to dog vaccination, stray dog elimination has increased steadily from 1975 to 2001. But in years 2002-2006 some local government authorities have completely stopped dog elimination activities and as a result dog elimination declined by 90% in 2006 compared to year 2002 (Table 26). In year 2007 dog elimination activities were not carried out.

In year 2007 dog sterilization and administering progesterone injections were carried out and a total of 9253 dog sterilizations and 90383 progesterone injections were given to dogs through the Public Health Veterinary Services Programmes.

Table 27 shows the Positivity rate of human brains tested for rabies at the laboratory of the Medical Research Institute, Colombo.

### Rabies Control Programme

The Public Health Veterinary Services (PHVS) Unit is the body to control and prevent human and animal rabies in the country. The Epidemiology Unit is the national centre for disease surveillance and carries out all surveillance activities related to human rabies in the country through its wide network at the regional and divisional levels. Strategies of rabies control in Sri Lanka are; surveillance of rabies, promotion of responsible dog ownership, immunization of domestic, community and stray dogs against rabies, birth control for dogs, destruction of stray dogs suspected of incubating the rabies virus, post-exposure treatment, training and health education, enforcement of rabies control legislation and promotion of multi-sectoral co-operation and community participation.

Ministry of Health has appointed the National Task Force for rabies elimination in 2004. The Task Force is focusing on the implementation of most of these activities through the local government authorities with the cooperation of the

Table 21.

### NUMBER OF CONFIRMED CASES OF HUMAN RABIES BY RDHS DIVISIONS - 2007

RDHS Division	Number of Cases confirmed	% of Cases confirmed	Rate / 100,000
Colombo	1	01.82	0.34
Gampaha	8	14.55	0.44
Kalutara	5	09.09	0.44
Kandy	2	03.64	0.15
Matale	2	03.64	0.42
Nuwara Eliya	1	01.82	0.14
Galle	5	09.09	0.48
Hambantota	2	03.64	0.36
Matara	2	03.64	0.25
Jaffna	1	01.82	0.27
Batticaloa	6	10.91	0.79
Trincomalee	1	01.82	0.25
Kurunegala	8	14.55	0.52
Anuradhapura	3	05.45	0.37
Moneragala	2	03.64	0.45
Ratnapura	3	05.45	0.28
Kilinochchi	2	03.64	1.24
Mannar	1	01.82	1.12
<b>SRI LANKA</b>	<b>55</b>	<b>100.00</b>	<b>0.33</b>

Table 22.

### AGE DISTRIBUTION OF CONFIRMED HUMAN RABIES CASES, 2000-2007

Age Group	2000	2001	2002	2003	2004	2005	2006	2007
<1 year	0	0	0	0	0	0	0	0
1 - 4 years	3	8	2	6	3	0	2	3
5 - 19 years	30	17	15	19	17	11	18	6
20 - 59 years	39	31	29	48	46	30	32	35
60 & Over	23	10	10	3	16	9	16	11

Sources - Epidemiology Unit

MOOH. The necessary legislations have been developed.

Most of the lives would have been saved, if they had received the post Exposure Treatment (PET) as recommended. Public awareness on PET should be strengthened. Also the rational post exposure treatment practices at the hospitals should be reviewed regularly as a part of the clinical audit for PET. This is the most expensive

single item among the drug allocations of the Ministry. Exposure opportunities are to be minimized by integrated activities of control of dog population and vaccination. Periodical review of the efficacy of dog vaccination is another aspect for future research. Strengthening present regulations and creating community responsibility, particularly in dog ownership are equally important in rabies control activities in the country.

Table 23.

**SEX DISTRIBUTION OF CONFIRMED HUMAN RABIES CASES, 2000-2007**

Sex	2000	2001	2002	2003	2004	2005	2006	2007
Male	70	51	38	58	59	38	54	37
Female	25	15	18	18	22	12	14	18

Sources - Epidemiology Unit

Table 24.

**DISTRIBUTION OF HUMAN RABIES CASES BY TYPE OF BITING ANIMAL, 2000 – 2007**

Type of animal	2000	2001	2002	2003	2004	2005	2006	2007
Household Pet	23	34	29	18	13	11	13	10
Neighbors' Pet	9	6	4	9	7	8	11	4
Stray	41	16	18	35	36	24	28	21
Unknown	22	10	5	14	24	7	16	20

Sources - Epidemiology Unit

Table 25.

**DISTRIBUTION OF HUMAN RABIES CASES BY TYPE OF BITING ANIMAL, 2000 – 2007**

Animal	2000	2001	2002	2003	2004	2005	2006	2007
Dog	67	49	36	63	69	42	58	45
Cat	8	5	5	4	2	1	1	4
Other	6	3	15	4	2	0	2	0
unknown	14	9	6	5	7	7	7	6

Sources - Epidemiology Unit

Table 26.

**RABIES CONTROL ACTIVITIES AND NUMBER OF HUMAN DEATHS FROM RABIES, 1975 – 2007**

Year	Vaccination of dogs	Elimination of dogs	Total Heads examined at MRI		Human rabies deaths	
			Number	% Positive	Number	Rate
1975	42,252	1,610	456	64.7	377	2.7
1980	120,143	36,845	420	52.5	209	1.4
1985	268,561	58,238	344	55.5	113	0.7
1990	412,586	63,233	963	70.2	154	0.9
1995	452,828	106,862	1,217	69.7	124	0.7
2000	657,597	117,790	559	88.5	109	0.6
2001	770,375	119,761	NA	NA	83	0.4
2002	797,565	117,790	NA	NA	64	0.3
2003	664,493	84,350	NA	NA	76	0.4
2004	844,123	89,530	NA	NA	98	0.5
2005	818,162	62,693	NA	NA	55	0.3
2006	964,242	12,091	-	-	68	0.3
2007	907,517	-	NA	NA	55	0.3

Sources - Rabies Control Programme (PHVS) and Epidemiology Unit

Table 27

**HUMAN BRAINS TESTED FOR SUSPECTED RABIES DEATHS, 2003 - 2007**

Year	Number of brains tested	Number of brain positive	Rate (%)
2003	33	15	45
2004	42	24	57
2005	28	20	71
2006	44	31	70
2007	38	32	78

Sources - Medical Research Institute

Table 28.

**22. SUMMARY OF NOTIFIABLE DISEASES – 2<sup>ND</sup> QUARTER 2008**

Health Region	Cholera	Acute Flaccid Paralysis (AFP)	Dysentery	Dengue Haemorrhagic Fever	Encephalitis	Enteric Fever	Food Poisoning	Human Rabies	Leptospirosis	Measles	Simple Contd. Fever	Tetanus	Typhus Fever	Viral Hepatitis
Colombo	0	4	41	437	7	12	6	0	104	0	10	0	1	27
Gampaha	0	4	49	263	5	11	1	2	142	0	3	0	2	36
Kalutara	0	1	95	137	3	8	1	0	187	0	1	0	0	10
Kandy	0	0	72	64	2	19	17	1	202	4	11	0	26	33
Matale	0	1	64	33	2	18	2	0	389	1	0	2	0	8
Nuwara Eliya	0	2	77	9	1	97	3	0	21	5	3	1	7	32
Galle	0	3	66	29	4	1	1	1	116	1	1	0	3	2
Hambantota	0	2	25	15	2	1	1	0	34	1	5	0	24	2
Matara	0	0	54	67	8	3	0	0	117	0	5	0	54	5
Jaffna	0	2	40	20	2	74	6	0	0	2	1	0	40	7
Kilinochchi	0	1	12	0	0	0	0	0	1	2	0	0	0	0
Mannar	0	0	4	5	0	29	0	0	0	0	0	0	1	2
Vavuniya	0	0	23	0	0	2	7	0	3	1	0	0	1	2
Mullaitivu	0	1	4	0	0	4	12	0	0	4	12	0	1	2
Batticaloa	0	0	39	29	3	10	2	1	3	0	1	1	0	30
Ampara	0	1	82	13	0	3	0	0	10	1	9	0	0	4
Trincomalee	0	0	31	48	1	7	11	0	17	0	0	2	6	4
Kurunegala	0	1	35	67	3	18	11	1	135	1	9	2	2	19
Puttalam	0	0	15	85	0	83	18	0	18	2	5	0	17	8
Anuradhapura	0	0	25	25	3	0	1	2	190	1	7	0	1	3
Polonnaruwa	0	1	43	27	0	7	2	0	46	1	7	0	1	4
Badulla	0	1	134	29	1	35	12	0	20	0	0	0	24	15
Moneragala	0	2	164	17	1	13	100	0	59	0	2	0	21	13
Ratnapura	0	5	93	47	8	7	5	0	70	1	3	0	24	12
Kegalle	0	0	63	156	5	29	2	0	149	1	1	0	18	212
Kalmunai	0	1	113	17	0	5	7	0	0	0	0	0	1	8
<b>TOTAL</b>	<b>0</b>	<b>33</b>	<b>1463</b>	<b>1639</b>	<b>61</b>	<b>496</b>	<b>228</b>	<b>8</b>	<b>2033</b>	<b>29</b>	<b>96</b>	<b>8</b>	<b>275</b>	<b>500</b>

No polio cases. (from AFP surveillance system).

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This document is available on the internet [www.epid.gov.lk](http://www.epid.gov.lk).

Figures given may be subject to revision.

The editor welcomes accounts of interesting cases, outbreaks or other public health problems of current interest to health officials.

Such reports should be addressed to:

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