

Volume 50
July - September
2009



Epidemiological Bulletin

SRI LANKA

Third Quarter
2009

Epidemiology Unit
Ministry of Health

<http://www.epid.gov.lk>

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1. POLIOMYELITIS

Fifteen (15) Acute Flaccid Paralysis cases were notified to the Epidemiology Unit during the 3rd quarter 2009. This contrasts with the 25 and 16 AFP cases each reported during the 3rd quarter 2008 and 2007 respectively. This number is just above half of the expected number of AFP cases per quarter which is 28 according to WHO surveillance criteria. This required 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. A non - polio AFP rate of 1.1 per 100,000 under 15 population has been achieved for the quarter.

Notification of AFP Cases from Hospitals

Almost one fourth of all cases (4 i.e.28%) 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. TH Peradeniya and TH Kandy reported 2 cases each within the quarter. TH Karapitiya, TH Kurunegala, GH Kalutara, GH Ratnapura, GH Matara and GH Gampaha reported one case each.

Distribution of AFP Cases by Provinces, Districts & MOH Areas

Kurunegala district of North Western Province had the highest number of AFP cases reported from a district in the 3rd quarter. The number of cases reported was 3 (20%). Two districts namely Gampaha and Kalutara from the Western province reported 2 cases (13%) each. The complete list of distribution of AFP cases according to the province, district and MOH area is given in Table 1.

Seasonal Distribution of AFP Cases

The majority of the AFP cases were reported in July in the 3rd quarter. The number reported for the month was 7 (47%). In August and September 4 cases (26%) each were reported .

Distribution of AFP Cases by Age and Sex

Majority of the AFP cases (6 i.e. 40%) reported in the 3rdquarter this year were between 5 -9 years of age. This is similar to the trend seen in the corresponding quarter in the previous year where the majority of the AFP cases reported belonged to the same age group. In this quarter, 5 (33%) of the cases belonged to 1- 4 year age group and four cases belonged to 10-14 year age group. None of the cases were below 1 year of age.

Fifty three percent of the AFP cases (8) in the 3rdquarter 2009 were male. This is comparable to the same quarter 2008 where the majority of the cases were male (60%).

Table 2 shows the age and sex distribution in 3rdquarter 2009.

Table 1

GEOGRAPHICAL DISTRIBUTION OF AFP CASES – 3RD QUARTER 2009

Province	District	MOH Area	Number of AFP cases
W e s t - e r n	Kalutara	Bandaragama	1
		Matugama	1
	Gampaha	Wattala	1
		Negombo	1
S o u t h - e r n	Galle	Habaraduwa	1
	Matara	Welipitiya	1
Central	Kandy	Wattegama	1
		Matale	Galewela
	Nuwara Eliya	Rikilla-gaskada	1
Sa- baragamu va	Ratnapura	Kolonna	1
		Kegalle	Rambukkana
N o r t h Western	Kurunegala	Bingiriya	1
		Hettipola	1
		Panduwasnuwara	1
	Puttalam	Puttalam	1

Laboratory Surveillance of AFP Cases

Two stool samples collected within 14 days of 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 be completed to make the samples of 'good condition'.

Fourteen AFP cases (93%) reported in the quarter had at least one stool sample sent to MRI for polio virology. Medical Research Institute received two timely stool samples from 13 cases (87%) out of the 15 AFP cases reported in the quarter for polio virology. It is higher than the timely stool collection rate of 84% achieved out of 25 AFP cases reported in the respective quarter in 2008.

2. CHOLERA

No confirmed cases of cholera were reported to the Epidemiology Unit during the 3rd quarter 2009. Last case of cholera was reported in the country in January 2003.

Table 2

DISTRIBUTION OF AFP CASES BY AGE AND SEX -- 3RD QUARTER 2009

Age Group	Sex		Total
	Male	Female	
<1 year old	0	0	0
1-4 year old	2	3	5
5-9 year old	3	3	6
10-15 year old	3	1	4
Total	8	7	15

3. TETANUS

During the 3rd quarter 2009, 5 tetanus cases were notified to the Epidemiology Unit. This is in comparison to 8 cases each reported during the previous quarter and corresponding quarter of 2008.

Two cases from Gampaha and Badulla districts were investigated and confirmed as tetanus during the current quarter. Both were males in the 45 – 49 year age group and the immunization status was unknown. No deaths due to tetanus were reported during the quarter.

4. MEASLES

During the 3rd quarter 2009, 82 cases of measles were notified to the Epidemiology Unit of which 59 were from the district of Vavuniya. This is in comparison to 28 cases notified during the previous quarter and 26 cases in the corresponding quarter of last year.

Only eleven (11) cases have been investigated during the current quarter which needs improvement since this data is used to monitor the progress of measles immunization programme in the country. Only 6 cases had symptoms compatible with the case definition of measles (Table 3).

According to the data received from MRI, 26 samples were received from the entire country for serological confirmation of which 11 (42%) were positive for measles.

5. LEPTOSPIROSIS

During the 3rd quarter 2009, 1567 cases and 61 deaths (CFR 3.8%) due to Leptospirosis were notified to the Epidemiology Unit compared to 903 cases and 31 deaths in the previous quarter and 2405 cases and 61 deaths during 3rd quarter 2008.

The sentinel surveillance sites reported 443 cases (49.0% of the total) and 31 deaths (51.6% of the deaths) during the current quarter.

Majority of the cases (44%) were in the 30-54 years age group and male:female ratio is 8:1.

Table 3

SELECTED CHARACTERISTICS OF CONFIRMED CASES OF MEASLES – 3RD QUARTER 2009

(N = 6)

Sex	Male	3
	Female	3
Age group	< 1 year	2
	1-4	1
	10-14	2
	20-24	1
Immunization status	Immunized	3
	Non immunized	1
	Unknown	2
District	Anuradhapura	1
	Nuwara-Eliya	1
	Vavuniya	4

6. HUMAN RABIES

Eight cases of human rabies were notified to the Epidemiology Unit in the 3rd quarter 2009, compared to 11 cases in the previous quarter and 13 cases in the corresponding quarter of year 2008. Distribution of cases by district is given in Table 23.

Animal Rabies

During the quarter 155 dogs were reported positive for rabies compared to 188 in the previous quarter and 165 in the corresponding quarter of 2008. In addition the following animals were also reported positive; Cats –17, Wild Animals -03, Domestic Ruminants –01

Rabies Control Activities*

Dog vaccination - A total of 319944 dogs were immunized during the 3rd quarter 2009 when compared to 255860 in the previous quarter and 315563 in the corresponding quarter of last year.

Animal Birth Control

Chemical - 14668 female dogs were injected with birth control injections (Progesterone) during the quarter under review.

Surgical - 73682 female dogs were subjected to sterilization by surgical method during the quarter under review.

*Source – Director/PHVS

7. ENTERIC FEVER

In the 3rd quarter 2009, a total of 831 cases of enteric fever were notified to the Epidemiology Unit, compared to 515 cases in the previous quarter and 377 cases in the corresponding quarter of 2008. The district of Vavuniya (498) reported the highest number of cases (Table 23).

8. VIRAL HEPATITIS

In the 3rd quarter 2009, 2114 cases of viral hepatitis were reported to the Epidemiology Unit, compared to 3339 cases in the previous quarter and 413 cases in the corresponding quarter of 2008.

Among the reported cases, 795 were investigated and confirmed as viral hepatitis. RDHS area Vavuniya notified the highest number of cases (797) accounting for 38% of the total case load (Table 23). The MOH areas Cheddikulam (660 cases) and Vavuniya (121cases) in the Vavuniya district have reported the highest number of cases .

9. DYSENTERY

In the 3rd quarter 2009, 1796 cases of dysentery were notified to the Epidemiology Unit, compared to 2566 cases in the previous quarter and 1577cases in the corresponding quarter of 2008. The MOH area Cheddikulam (325) notified the highest number of cases.

10. JAPANESE ENCEPHALITIS (J.E.)

During the 3rd quarter 2009, 57 cases of Encephalitis and 2 deaths were reported compared to 52 cases and 2 deaths reported during the previous quarter and 61 cases and no death reported in the corresponding quarter of 2008.

Among the reported cases, 42 were investigated and 18 were confirmed as JE by MOOH and none of them had been immunised. Twenty five cases of laboratory confirmed JE were reported during the 3rd quarter 2009 (Table 4)

Table 4

SELECTED CHARACTERISTICS OF CONFIRMED CASES OF JE – 3RD QUARTER 2009 (N = 25)

Sex	Male	14
	Female	11
Age group	10-20 years	09
	20-40 years	10
	>40	06
District	Batticaloa	01
	Trincomalee	01
	Colombo	02
	Gampaha	06
	Kalutara	03
	Kandy	01
	Nuwara Eliya	01
	Kalmunai	02
	Ratnapura	02
	Kegalle	04
Immunization status	Unknown	02
	Immunized	00
	Non immunized	12
	Unknown	13

11. MALARIA

During the 3rd quarter 2009, there was an increase in the incidence of malaria in comparison to the same period of 2008 as seen in Table 5. The number of P.v. infections reported during the period under review have increased. All these cases were detected among personnel of the armed forces in the Northern Province and Kataragama Region in Moneragala District. Distribution of malaria cases by RMO (Regional Malaria Officer) division is shown in Table 6.

Table 5

RESULTS OF BLOOD SMEAR EXAMINATION FOR MALARIA PARASITES—3RD QUARTER 2008-2009

	3rd Quarter 2008	3rd Quarter 2009
No. of blood smears examined	257863	200270
No. of positives	80	137
No. of <i>P. vivax</i>	69	135
No. of <i>P. falciparum</i>	06	02
No. of mixed infections	04	00
No. of infant positives	01	00
Slide positivity rate (S.P.R.)	0.03%	0.07%
P.v. : P.f. ratio	11:1	67:1
Percentage of infant positives	1.25%	0%

Table 6

**DISTRIBUTION OF MALARIA CASES BY RMO
DIVISION - 3RD QUARTER 2009**

RMO Division	Blood smears	Positives	P.v.	P.f./ Mixed
Colombo	12128	3	03	0
Gampaha	7773	1	01	0
Kalutara	2811	0	00	0
Kandy	7875	0	00	0
Matale	3415	1	01	0
Nuwara Eliya	102	0	00	0
Galle	4570	0	00	0
Matara	4541	0	00	0
Hambantota	8174	2	02	0
Jaffna	12788	4	04	0
Kilinochchi	45	24	24	0
Mannar	849	07	07	0
Vavuniya	5418	10	09	1
Mullaitivu	42	42	42	0
Batticaloa	9612	02	02	0
Ampara	5623	03	03	0
Trincomalee	19932	03	03	0
Kurunegala	18418	0	00	0
Maho	5456	01	01	0
Puttalam	6303	02	02	0
Anuradhapura	21846	05	04	1
Polonnaruwa	15148	01	01	0
Badulla	3571	00	00	0
Moneragala	10086	23	23	0
Ratnapura	5290	02	02	0
Kegalle	1682	00	00	0
Kalmunai	6772	01	01	0
TOTAL	200270	137	135	2

P.v.- *Plasmodium vivax*

P.f.- *Plasmodium falciparum*

12. DENGUE FEVER (D.F.)/ DEN- GUE HAEMORRHAGIC FEVER (D.H.F.)

During the 3rd quarter 2009, 11617 cases of DF/DHF and 75 deaths were reported (CFR 0.65%) when compared to 12288 cases and 153 deaths (CFR 1.2%) reported during the previous quarter.

Table 7 shows the distribution of DF/DHF cases and deaths in the RDHS divisions during the quarter.

Special surveillance data on 2167 confirmed cases were received and analysed during the current quarter. The age distribution of cases

showed that 588 cases (27%) were below 15 years of age. The majority of the cases (1089 i.e. 50%) were between 15-39 years of age and 434 (20%) were aged 40 years or above.

According to clinical findings, majority of the reported cases (71%) were classified as dengue fever. Twenty nine percent were classified as DHF with 20%, 8% and 1% falling into DHF I, DHF II and DHF III categories respectively.

During the 3rd quarter 2009, 2954 blood samples were tested using 1gM capture ELISA test and haemagglutination inhibition test at the Department of Virology, MRI and 2017 samples were confirmed as positive (Table 8).

The results of entomological surveillance on dengue vectors by the Entomology Department of MRI is given in Table 9.

Table 7

**MORBIDITY AND MORTALITY DUE TO DF/DHF
- 3RD QUARTER 2009**

RDHS Division	Cases	Percentage	Deaths
Colombo	1402	12.1	11
Gampaha	1557	13.4	15
Kalutara	633	5.4	3
Kandy	1447	12.5	11
Matale	794	6.8	8
Nuwara Eliya	108	0.9	0
Galle	294	2.5	1
Hambantota	289	2.5	2
Matara	443	3.8	0
Jaffna	9	0.1	0
Kilinochchi	0	0.0	0
Mannar	1	0.0	0
Vavuniya	55	0.5	1
Mullaitivu	0	0.0	0
Batticaloa	147	1.3	3
Ampara	72	0.6	0
Trincomalee	53	0.5	1
Kurunegala	1205	10.4	6
Puttalam	281	2.4	1
Anuradhapura	155	1.3	0
Polonnaruwa	73	0.6	0
Badulla	136	1.2	2
Moneragala	71	0.6	0
Ratnapura	996	8.6	6
Kegalle	1326	11.4	3
Kalmunai	70	0.6	1
TOTAL	11617	100	75

Table 8
DHF STATISTICS FROM DEPARTMENT OF
VIROLOGY, MRI - 3RD QUARTER 2009

Month	No Tested	No. Positive
July	1520	993
August	852	605
September	582	419
Total	2954	2017

Table 9
AEDES LARVAL DENSITIES (BRETEAU
INDEX) IN COLOMBO AND GAMPAHA
DISTRICTS – 3RD QUARTER 2009

MOH Area	July		August		September	
	A	B	A	B	A	B
Nugegoda	0	0	0	4.0	5.0	7.0
Maharagama	-	-	0	5.1	8.0	14.0
Moratuwa	2.2	1.1	0	0	2.0	2.8
Kaduwela	1.0	6.0	0	8.0	0	10.0
Ragama	0	3.7	0.8	2.4	1.1	8.5
Ja-Ela	2.0	5.5	2.0	5.3	4.6	9.3
Wattala	1.0	2.0	0	1.0	2.0	4.0
Mirigama	0	4.6	0	5.4	0	3.0
Mahara	-	-	6.0	1.3	0	9.0
Kelaniya	0.8	7.2	0.6	1.3	2.0	6.8
Biyagama	0	13.0	1.5	8.5	0	4.0
Kalutara	-	-	0	1.7	0.5	10.2

(A) = *Aedes aegypti*

(B) = *Aedes albopictus*

Number of premises examined per area = 300

13. BACTERIOLOGY REPORT 3RD QUARTER 2009-MEDICAL RESEARCH INSTITUTE

Table 10

	JULY	AUG	SEP
(A) CHOLERA			
No. of stool spe. Examined	111	91	138
No of El.tor Cholera	0	0	0
Ogawa	0	0	0
Inaba	0	0	0
Cholera 0139	0	0	0
(B) SALMONELLA			
Blood No. examined	75	78	62
S.Typhi	0	1	0
S. paratyphi	0	1	0
Stools- No. examined	224	245	243
No +ve s.Typhi	0	0	0
S-paratyphi A	0	0	0
Others	1	4	3
(C) SHIGELLA			
No. of spec. examined	224	245	243
No.+ve Sh.flexneri1			
Sh.flexneri 2	1		
Sh.flexneri 3			
Sh.flexneri 4			
Sh.flexneri 5			
Sh.flexneri 6			
Sh.sonnei	1	1	2
Sh. Others			1
(D) ENTEROPATHOGENIC			
E. Coli			
No. of spec. examined			
No. of positive Group A	0	0	1
(E) CAMPYLOBACTER			
No. of spec. examined	83	103	95
No. of +ve	1	1	2

14. TUBERCULOSIS

A total of 2631 tuberculosis patients were registered for 3rd quarter 2009 by the National Programme for Tuberculosis Control and Chest Diseases. Of this total, 1977 suffered from pulmonary disease, and the balance 654 patients from non-pulmonary disease. Of these patients 1472 were bacteriologically confirmed with a bacteriological confirmation rate of 74.46%. The distribution of tuberculosis patients by RDHS division is given in Table 11.

B.C.G. vaccination

A total of 87090 B.C.G. vaccinations were carried out during the quarter with 88.57% coverage.

Table 11.

TUBERCULOSIS PATIENTS BY RDHS DIVISIONS - 3RD QUARTER 2009

RDHS DIVISION	PTB	EPTB	Total	Pulmonary TB Direct Smear	
				No. +VE	%
Colombo	09	130	569	356	81.1
Gampaha	201	79	280	171	85.1
Kalutara	259	61	320	197	76.0
Kandy	141	48	189	86	61.0
Matale	23	09	32	19	82.6
Nuwara Eliya	25	09	34	18	72.0
Galle	122	47	169	103	84.4
Hambantota	20	15	35	11	55.0
Matara	53	09	62	43	81.1
Jaffna	61	17	78	23	37.7
Vavunia	22	4	26	16	72.7
Kilinochchi	6	1	7	5	83.3
Mannar	3	1	4	3	100.0
Mullativu	3	1	4	2	66.7
Ampara	61	11	72	44	72.1
Batticaloa	36	12	48	27	75.0
Trincomalee	67	8	75	23	34.3
Kurunegala	101	61	162	70	69.3
Puttalam	27	13	40	20	74.1
Anuradhapu-	36	27	63	29	80.6
Polonnaruwa	22	3	25	15	68.2
Badulla	38	19	57	30	79.0
Monaragala	16	3	19	05	31.2
Kegalle	106	30	136	82	77.4
Ratnapura	78	35	113	70	89.7
Kalmunai	11	1	12	4	36.3
Total	1977	654	2631	147	74.5

PTB-Pulmonary Tuberculosis
EPTB- Extra Pulmonary Tuberculosis
Data from Central TB Register
Source - National TB Register

15. SURVEILLANCE AT SEA PORT

Surveillance activities carried out by the Port Health Office at Colombo Sea Port during the 3rd quarter 2009, is given below.

1. Yellow Fever Vaccination	Total
Total number vaccinated	- 10
2. Granting Pratique to Vessels	
Number issued	- 1117
3. Deratting Certification	
Number issued	- 29

Details of the vaccinations carried out by the Assistant Port Health Office, Colombo 8, during the 3rd quarter 2009, is given below.

	Total
a. Yellow fever	676
b. Meningococcal meningitis	101
C. Polio vaccination	75

16. SURVEILLANCE AT AIRPORT

Surveillance activities carried out at the International Airport, Katunayake during the 3rd quarter 2009 is given below.

1. Yellow Fever Surveillance

a. No. with valid certificate	-	26
b. No. without valid certificate & Deported	-	-
c. No. without valid certificate Isolated	-	-

2. Airport Sanitation

a. No. of sanitary inspections carried out including food establishments	-	17
b. No. of food samples taken under Food Act	-	00
c. No. found defective	-	04
d. No. of court cases/prosecuted/warned	-	01
e. No. of water samples tested	-	06
f. No. reported contaminated	-	00

Other Health Activities

3. Release of human remains

a. No. of human remains released	-	117
b. No. referred to JMO for post-mortem	-	03
c. No. alleged suicide	-	02

17. LEPROSY

QUARTERLY RETURN OF LEPROSY STATISTICS - 3RD QUARTER 2009

Table 12.

1. National

	At the end of the quarter			Cumulative for end of the quarter		
	3rd quarter 2009	3rd quarter 2008	Diff. (%)	3rd quarter 2009	3rd quarter 2008	Diff. (%)
New patients detected	411	430	-4.41	839	822	2.0
Children	38	44	-13.6	80	94	-14.8
Grade 2 Deformities	33	39	-15.3	56	68	-17.6
Multi-Bacillary	196	198	-1.0	389	357	8.96
Females	170	173	-1.7	367	320	14.6

2. Districts

District	New patients	Deformities	Child	MB	Females
Colombo	85	8	8	40	43
Gampaha	69	2	9	23	36
Kalutara	45	2	3	15	17
Western	199	12	20	78	96
Galle	03	00	00	01	01
Matara	20	01	02	13	13
Hambantota	14	00	00	08	02
Southern	37	01	02	22	16
Kandy	05	01	01	03	01
Matale	07	00	00	04	02
Nuwara Eliya	00	00	00	00	00
Central	12	01	01	07	03
Anuradhapura	17	00	02	07	04
Polonnaruwa	23	01	01	12	05
North Central	40	01	03	19	09
Kurunegala	24	05	00	20	06
Puttalam	07	01	02	05	01
North Western	31	06	02	25	07
Kegalle	05	00	00	01	00
Ratnapura	22	01	00	11	08
Sabaragamuwa	27	01	00	12	08
Badulla	02	00	01	00	01
Moneragala	03	01	00	02	01
Uva	05	01	01	02	02
Trincomalee	05	02	00	03	04
Batticaloa	18	02	02	10	10
Ampara	13	03	03	07	08
Kalmunai	22	03	04	11	06
Eastern	58	10	09	31	28
Jaffna	02	00	00	00	01
Vavuniya	00	00	00	00	00
Mannar	00	00	00	00	00
Mullativu	00	00	00	00	00
Kilinochchi	00	00	00	00	00
Northern	02	00	00	00	01
Sri Lanka	411	33	38	196	170

Source : Anti Leprosy Campaign

18. SURVEILLANCE REPORT ON AEFI- 2009

Surveillance of Adverse Events Following Immunization (AEFI) has effectively continued in the third quarter 2009. Completeness of reports has reached 92% while 46% of reports were received on time at the Epidemiology Unit indicating good compliance for the system by the MOOH. Almost 60% of the districts in the country have found at least one adverse event during a month probably due to good awareness and enthusiasm for surveillance by the health staff in MOH areas.

The highest number of reports (99%) were sent from Kalmunai while Moneragala (91.9) and Vavuniya (86%) districts have sent fewer reports than the Sri Lankan average for completeness (92.3%).

However, there was only a marginal improvement in overall timeliness when compared to the corresponding quarter last year, from 45.8% to 46.2%. Best timeliness was reported from Polonnaruwa (71.2%) followed by Kegalle District (71.1%).

The highest percentage of nil reports were received from Vavuniya district (87%) followed by Trincomalee district (71%) which is much higher than the Sri

Lanka average (43%) indicating the need for more attention for surveillance.

The lowest percentage (13.3%) of such returns was received from the Hambantota district followed by Kegalle district. (13.4%) (Table 13).

The highest rate (275.7 per 100,000 immunizations) of AEFI was reported as same as the previous quarter from Mannar district with the number of 51 AEFI. Highest number (363) was reported from the Colombo district with the rate of 81.0 per 100,000 immunizations which is marginally higher than the 3rd quarter 2008 (317 AEFIs and rate 66.8 per 100,000 immunizations).

The highest number (3304) and rate of AEFI (336.7 per 100,000 immunizations) were reported against DPT vaccine. When compared with the 3rd quarter 2008 for same, there was a considerable decrease in the rate of AEFI reported for DPT in 2009. The number and rates of reported AEFI against different vaccine are given in Table 14.

Total of 06 deaths temporally related to immunization were reported by the end of 3rd quarter 2009. This includes death due to anaphylaxis following Rubella immunization in Matara.

Table 13.

COMPLETENESS AND TIMELINESS OF MONTHLY REPORTING AND RECEIPT OF "NIL" REPORTS OF AEFI BY RDHS DIVISIONS UPTO 3RD QUARTER 2009

RDHS Division	(%) Completeness	(%) Timeliness	(%) "Nil" Returns	Reported AEFI	
				Number	Rate
Colombo	94.4	40.3	29.4	363	81.0
Gampaha	92.6	49.6	26.4	278	64.1
Kalutara	97.2	30.5	32.4	271	103.7
Kandy	92.6	44.0	40.0	340	107.0
Matale	98.1	63.2	41.5	151	131.6
Nuwara Eliya	94.9	51.4	55.9	95	53.4
Galle	94.7	41.4	53.1	186	80.2
Hambantota	99.0	40.8	13.3	314	212.4
Matara	96.1	54.4	62.6	105	55.8
Jaffna	93.7	18.6	32.2	137	119.7
Kilinochchi	0	0	0	0	0
Mannar	38.9	28.6	42.9	51	275.7
Vavuniya	86.1	29.0	87.1	10	21.2
Mullativu	0	0	0	0	0
Batticaloa	98.0	34.0	51.5	207	139.1
Ampara	96.8	36.1	50.8	58	78.7
Trincomalee	96.7	48.3	72.4	37	33.6
Kurunegala	96.6	37.5	38.1	289	76.3
Puttalam	92.6	41.3	36.0	104	51.2
Anuradhapura	95.9	56.7	41.5	191	83.0
Polonnaruwa	93.7	71.2	49.2	75	76.7
Badulla	93.3	67.5	25.4	261	138.7
Moneragala	91.9	50.5	53.8	76	67.4
Ratnapura	98.8	38.1	39.4	263	114.7
Kegalle	98.0	71.1	13.4	248	136.6
Kalmunai	99.1	34.5	69.0	88	72.0
Sri Lanka	92.3	46.2	42.7	4198	91.7

* Rate Per 100,000 immunizations

The second death temporally related to Rubella immunization was reported from MOH division Ginigathhena and on investigation it was found that a cyst in the third ventricle of the brain blocking the CSF pathway was the cause for the death.

Another death was reported following aTD vaccination three days following vaccination in Kandekatiya MOH area. The child had bronchial asthma and was admitted to D/H Kandeketiya with a history of breathlessness and cyanosis and the cause of death was determined as status ashmaticus.

Three deaths temporally related to DPT vaccine were reported from Yatiyantota, Lankapura and Ambalantota MOH areas. The four months old infant who died in Yatiyantota MOH area was admitted to D/H Karawanella with a history of fever, breathlessness and pallor, a day following immunization. The child died on the third day following immunization and the post mortem revealed pneumonic changes in lungs.

The child who died in Ambalantota MOH area

developed symptoms such as refusal of feeds, lethargy and grunting after awakened from sleep on the second day following DPT immunization. Baby was admitted to P/U Ambalantota and was immediately transferred to G/H Hambantota with oxygen where she died soon after admission. Post mortem revealed that she had aortic valve stenosis, dilated hypertrophied left ventricle, dilated right atrium and ventricle, free fluid in the chest cavity and pericardial cavity, milky substance in the proximal and distal airways. Epidemiology Unit is awaiting histopathological reports to establish the definitive cause of death.

In the case of death reported from Lankapura MOH area following DPT vaccine, the child started to cry excessively about 6 hours after immunization but did not have fever cough or cold. Second day following immunization, the child was taken to a medical officer as she was continuously crying. She developed cough and cold on the same day. She died 3rd day after developing lung signs and the post mortem findings revealed right lung consolidation, left lung collapse and bilateral pleural effusion.

Table 14

NUMBER AND RATE OF SELECTED AEFI REPORTED BY VACCINE AND BY TYPE OF AEFI

Vaccine	Seizure	Allergic	Abscess	Severe Local reactions	High Fever	Lymphadenitis	Encephalitis	Paralysis of body	Meningitis	Anaphylactic Shock	Nodule	GBS	Arthralgia	Encephalopathy	Persistent screaming	Injection Reaction	**Others	*HHE	Death	Total	Rate/ 100,000 dosed
BCG	0	2	20	3	6	4	0	0	0	0	2	0	0	0	0	0	1	2	0	40	16.0
DPT	263	461	414	292	1138	0	0	0	2	1	604	0	15	0	75	13	13	13	0	3304	336.7
OPV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Measles	13	100	3	9	53	0	0	0	0	0	2	0	2	0	1	0	0	0	0	183	68.1
DT	3	44	4	20	18	0	0	0	0	0	11	0	2	0	0	3	0	1	0	106	43.8
TT	1	20	1	8	5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	36	15.0
Rubella	0	164	5	2	4	5	0	0	0	5	0	0	0	0	0	40	11	0	2	238	184.8
JE	6	58	0	3	24	0	0	0	0	0	0	0	1	0	1	0	1	1	0	95	87.6
ATd	0	13	0	2	2	0	0	0	0	1	0	0	0	0	0	7	5	0	0	30	22.0
MR	6	113	2	4	13	0	0	0	1	2	0	0	0	0	0	0	0	0	0	141	56.7
Hep	0	9	9	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	20	2.7
Others	0	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Total	292	984	459	343	1268	9	0	0	3	9	621	0	20	0	77	63	31	17	2	4198	91.7

*Characterizes hypo responsiveness, hypotonia & change of skin colour.

** Weakness of the body & injection reaction which includes headache, vomiting faintishness etc due to anxiety reaction.

19. SEXUALLY TRANSMITTED DISEASES

Table 15.

NEW EPISODES OF STD/HIV/AIDS REPORTED OR TREATED AT STD CLINICS IN SRI LANKA* - 3RD QUARTER 2009

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 ¹	23	11	34	69	33	102	
AIDS	3	2	5	7	6	13	
	Early Syphilis ²	50	17	67	100	50	150
Syphilis	Late Syphilis ³	77	58	135	229	157	386
	Congenital Syphilis ⁴	2	0	2	3	0	3
Gonorrhoea ⁵	95	67	162	206	170	376	
Ophthalmia neonatorum ⁶	0	1	1	2	2	4	
Non specific cervicitis/urethritis	205	335	540	520	854	1374	
Chlamydial Infection	0	1	1	0	5	5	
Genital Herpes	274	307	581	699	894	1593	
Genital Warts	182	120	302	521	365	886	
Chancroid	1	0	1	2	1	3	
Trichomoniasis	12	38	50	21	85	106	
Candidiasis	263	386	649	638	978	1616	
Bacterial Vaginosis		316	316	0	798	798	
Other sexually transmitted diseases ⁷	122	29	151	278	96	374	
Non-venerial ⁸	1018	716	1734	2838	2060	4898	

* - 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

1 - includes AIDS cases

2 - diagnosed within 2 years of infection and considered to be infectious

3 - diagnosed after 2 years of infection and considered to be non-infectious

4 - includes both early and late cases

5 - includes presumptive Gonorrhoea

6 - includes both gonococcal and chlamydial conjunctivitis in neonatal period

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

8 - number of STD clinic attendees who were not having sexually transmitted diseases.

20. SURVEILLANCE REPORT ON INVASIVE BACTERIAL DISEASES- 2009

Invasive bacterial disease surveillance was carried out among children aged 2-59 months at Lady Ridgeway Children's Hospital and 4 other surveillance sites (Colombo South Teaching Hospital, National Institute of Health Sciences, Teaching Hospital Ragama and Teaching Hospital Galle). Till the end of 3rd quarter of 2009, 239 blood cultures were studied. Number of *S. pneumoniae* isolates was only 01. The isolation rate was 0.41%. Only five (2.1%) *Haemophilus influenzae* isolates were found while there were no type B isolates.

The number of CSF cultured was 56. There was no *S. pneumoniae* isolates detected among them. One *H. influenzae* (1.8%) was isolated while there was no type B detected.

Latex antigen test results are sensitive even if prior antibiotics are used. Of 19 Latex antigen tests done, 1 (5.3%) was found to be positive for *S. pneumoniae* whereas two (10.5%) were positive for *H. influenzae*. The test positivity rate was higher than isolation rates from both blood and CSF as anticipated. Thus, it is apparent that isolation of bacterial pathogens is an under estimate due to prior use of antibiotics. There were 4 (1.6%) patients confirmed as invasive pneumococcal disease and 7 (2.8%) patients with *H. influenzae*.

21. SURVEILLANCE REPORT ON AFP-2008

Poliomyelitis was made a notifiable disease in Sri Lanka in 1944. Immunization with OPV was initiated island wide in 1964. The largest outbreak in the country was reported in 1962 and every 6 years thereafter however with decreased severity. The last case of confirmed polio from the country was reported in 1993, in a female child aged 2 years from Kataragama in the DPDHS Division of Moneragala. Polio virus (P1 wild) was isolated and it was found that the child had been immunized with only 2 doses of OPV.

In 1990 Acute Flaccid Paralysis (AFP) was gazetted as a notifiable disease and individual case based surveillance of AFP was commenced in 1991. The case definition of an AFP case cited such a case as any child under 15 years of age presenting with acute onset flaccid paralysis or a person of any age highly suspected of poliomyelitis.

Epidemiology Unit is the central co-ordinating agency for the National AFP Surveillance programme under the Poliomyelitis Eradication Initiative, receiving information about AFP cases from Medical officers in curative institutions where the patients seek treatment and also from Medical Officers of Health (MOOH). In addition to the routine surveillance, active surveillance is carried out in the premier Children's Hospital in Colombo (Lady Ridgeway Hospital). An Epidemiologist from the Central Epidemiological Unit visits the hospital at least three days a week and checks the wards for cases of AFP.

Table 16

RESULTS OF SURVEILLANCE OF INVASIVE BACTERIAL INFECTIONS - 2005-2008

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>
2005	1398	8	15	14	430	1	5	0	312	7	25	25	18	36	35
2006	1686	10	18	16	361	4	11	0	338	3	16	15	16	29	27
2007	1113	10	15	0	257	1	5	0	236	6	14	0	19	26	0
2008	5298	37	50	30	1227	9	21	0	975	21	60	40	68	99	62
2009															
Jan	36	0	1	0	9	0	0	0	1	0	0	0	1	1	0
Feb	70	1	0	0	14	0	1	0	5	1	0	0	3	1	0
Mar	105	0	3	0	27	0	0	0	11	0	2	0	0	4	0
Apr	09	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	11	0	0	0	2	0	0	0	0	0	0	0	0	0	0
June	08	0	1	0	4	0	0	0	2	0	0	0	0	1	0
Total	239	1	5	0	56	0	1	0	19	1	2	0	4	7	0

In addition, 58 sentinel surveillance sites have been set up since 1996 in major hospitals in every RDHS Division where Consultant Paediatricians are in place. Regional Epidemiologists are expected to visit their respective sentinel sites in the regions at least once a week. A monthly report of cases of AFP including a nil report is received from the Regional Epidemiologists at the Epidemiology Unit in Colombo.

Weekly reports of AFP cases including zero or nil reports from the 58 sentinel sites in the entire country are being monitored at the Epidemiology Unit. Infection Control Nurses (ICN) of each sentinel site are responsible for sending this weekly return.

As a measure to counteract the threat posed from the neighbouring countries that report polio cases, MOOH in every district in northern and eastern provinces, Puttalam district and Nuwara Eliya district, carry out immunization of children less than 15 years of age who return to Sri Lanka from South India with an extra dose of OPV. A register of these South Indian returnees is maintained and updated regularly in each such MOH office. A monthly return summarizing the number of children under 15 years of age among the returnees, their OPV immunization coverage etc is sent to the relevant Regional Epidemiologist who sends a consolidated district report to the Epidemiological Unit monthly.

Also, since November 2007 all pilgrims departing for pilgrimages to India and especially to Buddhagaya should receive a dose of OPV at least 2 weeks prior to their travel date. This immunization activity is being carried out at all MOH offices and also at the Port Health Office in Colombo.

All children under 15 years of age among the Internally Displaced Persons (IDP) in the North are being immunized with 2 doses of OPV 4-6 weeks apart irrespective of their immunization status. This is to cover any under immunized pockets among them.

Geographical Distribution of AFP cases 2008

A total of 106 AFP cases were reported for the year 2008 (Fig.1). This yielded a non polio AFP rate of 1.9 per 100,000 under 15 year old population. The highest number of cases, 12 (11%) was reported from Gampaha RDHS Division. Ten cases each were reported from Galle RDHS Division and Ratnapura RDHS division. Highly populated Western province accounted for 26 (25%) and Central and Southern provinces 18 (17%) and 16 (15%) cases respectively. All Provinces and most RDHS divisions had reported AFP cases during the year. There were 5 cases from the Northern Province and 10 from the Eastern Province. Puttalam, Vavuniya and Mannar districts did not report any cases for the year. All the districts except the above had the required number of cases and had achieved a non polio AFP rate above 1 per 100,000 under 15 year old population.

Seasonal Distribution of AFP Cases 2008

July recorded the highest number of cases (13 i.e.12%) for the year. Twelve cases each (11%) were reported in April and December. Lowest number of cases (5) was seen in March. As in previous years there was no trend observed in this distribution. The figure II below shows the distribution of AFP cases for the year 2008 (Fig. II)

AFP Surveillance Performance by Hospitals 2008

The main sentinel site for AFP out of the 58 sentinel sites in the country, Lady Ridgeway Children's Hospital (LRH), Colombo which is a tertiary paediatric care center receiving referrals from other hospitals all over the country had reported over one fourth of the total case load (28%) this year. Thirty cases had been reported from LRH in 2008. Teaching Hospital Karapitiya in the South, another referral centre which drains a vast area in the country has reported 11 cases (10%) during the year.

Teaching Hospital Jaffna and General Hospital Vavuniya from the Northern Province of the country reported 3 and 2 AFP cases respectively during 2008.

All cases of AFP reported should have two stool samples collected within 14 days of onset of the paralysis. This is one of the main responsibilities of the sentinel hospitals in the AFP surveillance programme. Over eighty percent of cases should have two such timely stool samples to fulfill the criteria stipulated by the WHO. In 2008, 2 samples of stools were collected for virology within 14 days of the onset of paralysis from 85 cases (80%) of the 106 cases reported. Samples of stools were not collected from 2 out of 3 AFP cases that were reported from Teaching Hospital Jaffna. The other case had 2 late samples collected. This was due to transport difficulties that arose with the restrictions imposed in the face of heightened security measures.

Figure III shows the distribution of AFP cases notified from hospitals with their performance in collection of stools for the year 2008.

Age and Sex Distribution of AFP Cases 2008

The majority of AFP number of cases reported in the year was males. Out of the total of 106 AFP cases, 61 (58%) were males and 45 (42%) were female children. This is in contrast to the trend observed last year where an almost similar number of male (44) and female cases (43) were reported. In 2008, this male predominance was observed in both 1-4 year and 10 - 14 year age groups.

An almost three fourth (73%) of the cases (77) were between 1-9 years of age. Twenty three children (22%) were between 10 - 14 years of age and only 6 children were less than 1 year of age (Fig.IV).

Immunization Status of AFP Cases Reported in 2008

All AFP cases reported during the year 2008 were age appropriately immunized with OPV. Data supporting the immunization status of the children had been obtained from the Child Health Development Record (CHDR) by the medical officers treating the patients or by the Medical Officer of Health (MOH) team through the relevant surveillance forms.

Final Classification of AFP Cases 2008

In 2008 all 106 cases reported were assigned a final classification. A vast majority of the cases (77 i.e.73%) were classified as Guillan Barre syndrome (GBS) by the respective clinicians who reported these cases. This trend has been observed in the surveillance programme of the country throughout the recent years.

FIG I GEOGRAPHICAL DISTRIBUTION OF AFP CASES—YEAR 2008

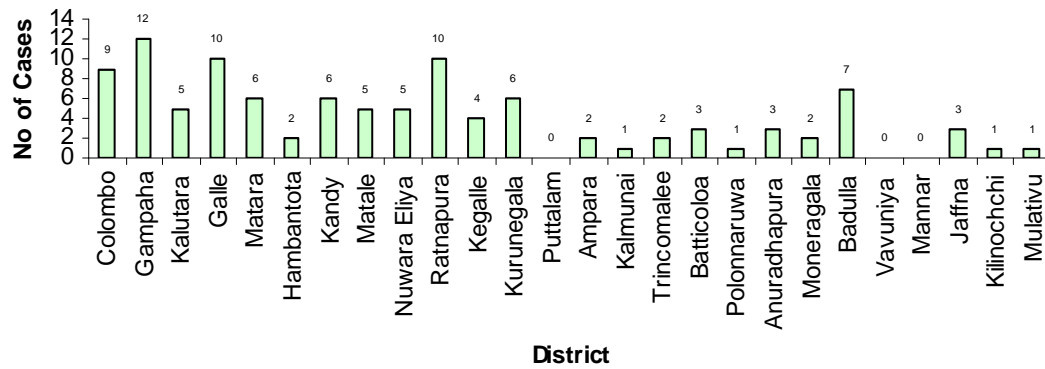
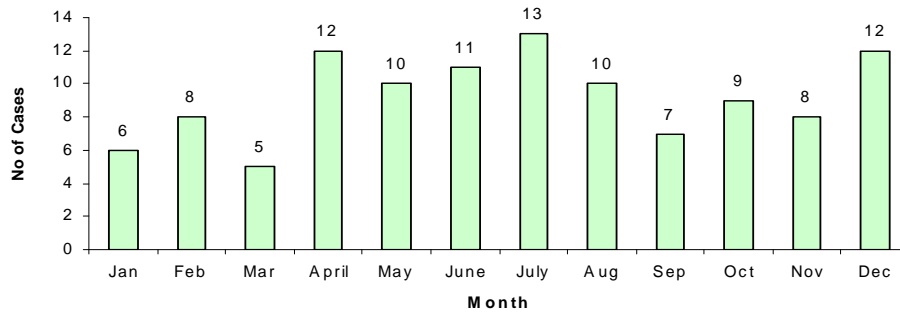


FIG. II DISTRIBUTION OF AFP CASES ACCORDING TO MONTH 2008



There were 6 cases (5%) of Transverse Myelitis cases. Table 1 below shows the final classification of the AFP cases for the year

Feed back Information on AFP Cases

Feed back information on AFP cases reported from institutions is sent to the respective clinicians once the cases are discarded with a final classification. This has proved to be an effective method of obtaining their cooperation for the surveillance programme. Copies of these feedback forms are sent to the respective Regional Epidemiologists and MOH.

Apart from this case based individual feedback, information is sent routinely to all the Regional Directors of Health Services (RDHS), Regional Epidemiologists (RE), MOH, Heads of Health Institutions and all the clinicians through the Weekly Epidemiological Report (WER). The Epidemiological Unit has been publishing the WER since 1973 with the objective of providing a quick feedback in the form of a weekly statement on the notifiable diseases reported on the Weekly Return on Communicable Diseases from the Medical Officer of Health (MOH) areas.

In addition to the feedback sent through these two methods, Quarterly Epidemiological Bulletin published by the Epidemiological Unit provides summary information on AFP surveillance activities for each quarter.

Indicators of AFP Surveillance and Laboratory performance 2008

Performance of an AFP surveillance programme is considered to be of adequate standard if a number of performance criteria were achieved. These criteria are stipulated by the Global Polio-

myelitis Eradication Initiative of the World Health Organization Firstly the system should detect at least one case of non-polio AFP for every 100,000 population of children aged less than 15 years. Secondly two adequate diagnostic stool specimens (2 stools specimens collected at least 24 – 48 hours apart within 14 days of onset of paralysis and received in good condition at the laboratory) should be collected from at least 80% of AFP cases reported. The other criteria are based on the performance of the laboratory processing the specimens, monitoring mechanisms in place to streamline the reporting system and the clinical investigation procedures involved.

1. Non polio AFP rate in children < 15 yrs. of age (Target $\geq 1/100,000$)

Sri Lanka achieved a non-polio AFP rate (Number reported/number expected) of 1.9 during the year 2008. This exceeds the expected rate of 1 per 100,000 population of under 15 year old children. This rate is higher than the non-polio AFP rate of 1.6/100,000 under 15 year old population reported in 2007. In the year 2008 most of the districts in the country have reported the expected number or more AFP cases. The AFP rate is routinely monitored for each district and surveillance is strengthened in those districts where the AFP rate has been low during the previous year.

2. Completeness of reporting

2.1 Weekly reporting of Notifiable Diseases (Target > 80%)

All Medical Officers of Health (MOOH) send a weekly return of notifiable diseases to the Epidemiological Unit. Completeness (number received/number expected) of these returns and their timeliness are monitored by the Epidemiological Unit.

2.2 Weekly reporting of AFP cases from institutions (Target > 80%)

Fifty eight hospitals around the country have been identified as sentinel sites (compared to 50 sites in 2004) which routinely report on AFP cases from the respective institutions. These weekly returns are monitored centrally for their completeness and the timeliness.

In 2008 the completeness of weekly reporting of AFP cases from those institutions was lower than the 79% recorded for the previous year and was 73%.

2.3. Monthly reporting of AFP cases by Regional Epidemiologists (REE) (Target >90%)

Regional Epidemiologists in all 26 districts send a monthly return on AFP to the Epidemiological Unit. Completeness and timeliness of these returns are monitored centrally. In the previous year the completeness of monthly reporting showed an improvement from 2007(81%) and was 86%.

3. Timeliness of reporting

3.1 Weekly reporting of Notifiable Diseases (Target > 80%)

The weekly reports from MOH on notifiable diseases received within a week from the due date are considered as timely. During the year 2008 the timeliness of reporting has improved from a 71% recorded in 2007 and was 75%.

3.2 Weekly reporting of AFP cases from institutions (Target > 80%)

During the year 2008 the timeliness of weekly reporting of AFP was unsatisfactory at 45%. This had not improved since 2007 where this figure also stood at 45%. Steps have been taken to educate the infection control nurses who are responsible for this activity in sentinel sites with repeated supervisions by the central as well as the regional level authorities.

3.3 Monthly reporting of AFP cases by REE (Target > 80%)

Monthly reports received from REE before the 20th of the following month are considered as timely. Timeliness of monthly reporting in the previous year showed a drop from 2007 (26%) and was an unsatisfactory 15%.

4. Reported AFP cases investigated within 48 hrs of reporting (Target >= 80%)

All AFP cases notified should be examined and investigated by an epidemiologist (at central or regional level) within 48 hrs of notification. In the year 2008, 100% of the AFP cases reported were investigated by an epidemiologist within 48 hours of notification.

5. Reported AFP cases with 2 stools specimens collected within 14 days of onset of paralysis (Target > 80%)

All cases of AFP reported should have two stool samples collected within 14 days of onset of the paralysis. Over eighty percent of cases should have two such timely stool samples to fulfill the criteria stipulated by the WHO.

In 2008, two samples of stools were collected for virology within 14 days of the onset of paralysis from 85 cases (80%) of the 106 cases reported. A further 3 cases had only one timely sample collected. Samples of stools were not collected from 2 AFP cases that were reported from Teaching Hospital Jaffna. There were 2 cases with bad quality samples which are excluded from the category of timely samples according to WHO criteria. Four cases had their second sample collected after 14 days of onset of paralysis and 10 cases had both samples collected after 14 days.

Stool samples from contacts

Following notification, stools samples are collected from 3 to 5 contacts of all AFP cases during the outbreak response activities carried out by the respective MOH. The contact stool sampling was satisfactory during the previous year and samples of stools were collected from contacts of 93 (88%) AFP cases reported in 2008.

Figure III. Performance of Sentinel Hospitals 2008

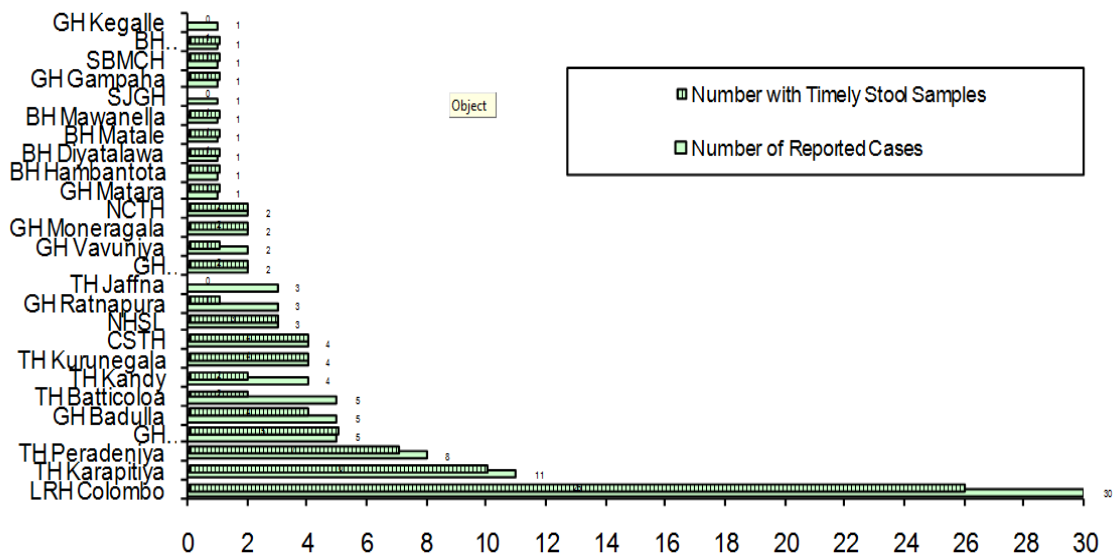


TABLE 17. DISTRIBUTION OF FINAL CLASSIFICATION OF AFP CASES 2008

Diagnosis	Number of AFP Cases (%)
Guillan Barre Syndrome	7 (73%)
Transverse Myelitis	6 (5%)
Miller Fisher Syndrome	3 (2%)
Viral Myositis	3(2%)
Investigated for limb weakness	3 (2%)
TB Meningitis	1(1%)
Myesthenia Gravis	1(1%)
Acute Pyogenic Meningitis	1(1%)
Cerebellitis	1(1%)
Cerebral Infarct	1(1%)
Acute Cerebellar Ataxia	2 (2%)
Poly Radiculitis	1(1%)
Acute Disseminating Encephalomyelitis	1(1%)
Total	106

The total number of samples received at the MRI from contacts was 352. Letters to improve this component were sent to relevant Medical Officers of Health.

6. Reported AFP cases with a follow-up examination at 60 days after onset of paralysis to verify the presence of residual paralysis or weakness (Target >=80%)

All the reported AFP cases should be followed up at 60 days of onset of paralysis by an epidemiologist at central or regional level for presence of residual paralysis. In 2008, 5 out of the 106 cases reported have not been followed up after 60 days of onset of paralysis to date. It therefore achieved a 95% follow up rate.

7. Specimens of stools arriving at National Laboratory (MRI) within 03 days of being collected (Target> 80%)

In the year 2008, 202 samples out of the total of 232 samples collected have been received after 3 days of being collected. This amounts to a 87% of

the samples of stools being received within the specified time.

8. Specimens of stools arriving at the National Laboratory in good condition (Target >80%)

In 2008, out of the 232 samples of stools collected from 106 AFP cases 219 samples were in 'good' condition (94%) on arrival at the laboratory. Good condition means that upon arrival:

- a) There is ice in the container
- b) Specimen volume is adequate
- c) There is no evidence of leakage or desiccation
- d) Appropriate documentation is complete

9. Specimens of stools with a turn around time <28 days (Target>80%)

In the previous year out of the 232 samples of stools collected and sent, results of 227 specimens of stools were reported within 28 days. This achieved the target with a percentage of 98%.

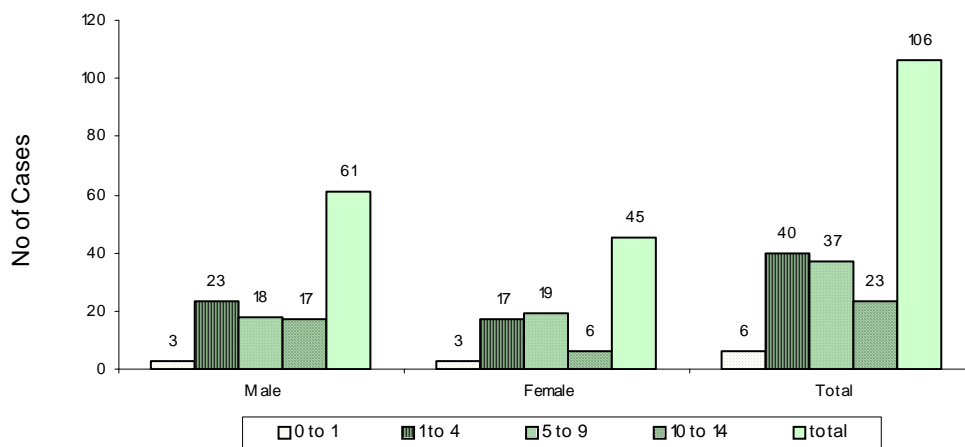
10. Stool specimens from which non-polio enterovirus was isolated (Target> 10%).

Non polio enterovirus was isolated from 27 samples of stools out of the total 232 samples received (11.6%). This is above the expected target of 10%. Wild poliovirus was not isolated at the MRI during 2008 and vaccine virus was isolated in 5 samples.

National Polio Expert Committee Meetings 2008

The National Polio Expert Committee consists of experts from fields of paediatrics, virology, epidemiology, clinical neurology and neurophysiology. The expert committee meets once every quarter to discuss AFP cases that could not be discarded on laboratory results. In 2008, six such AFP cases were presented to the committee for deliberations. All these cases had stools samples collected late and had residual paralysis at 60 days of onset of paralysis. All of them were reviewed and discarded by the Expert committee as non Polio AFP cases with diagnosis of Guillain Barre' Syndrome in 4 of the cases and TB Meningitis and Inflammatory Myopathy in the other 2 cases.

Fig. IV Age and Sex Distribution of AFP Cases 2008



22. SURVEILLANCE REPORT ON VIRAL HEPATITIS -2008

Viral Hepatitis is endemic in Sri Lanka, particularly in areas where sanitation is poor and access to safe water is an issue. Infrequent outbreaks have occurred in the past and they have mostly been confined to limited geographical areas.

It is one of the notifiable diseases in Sri Lanka. In the year 2008, 1930 cases (9.4 cases per 100,000 population) of viral hepatitis were notified to the Epidemiology Unit, out of which 847 were confirmed cases (Table 18). However, the actual incidence of viral hepatitis is likely to be much more than the reported figures, as a large number of patients do not seek treatment at all or are being treated by private practitioners, out patient departments and practitioners of traditional medicine, and therefore, not reported via the routine health information system. In addition, a significant proportion of viral hepatitis cases are known to be asymptomatic. The highest number (523) was reported from Kegalle RDHS division (Table 19). The other RDHS areas where high numbers of viral hepatitis cases were reported were; Badulla (201), Gampaha (200), Kandy (134), Colombo (118), Nuwara Eliya (109) and Batticaloa (95). The lowest numbers were reported from Kilinochchi (02), Vavunia (05), Galle (08) and Mullativu (10) though under reporting of cases is one of the reasons for the low figures seen in some of these RDHS divisions.

The highest incidence of viral hepatitis calculated as cases per 100,000 population was 64.1 re-

TABLE 18: NOTIFIED AND CONFIRMED CASES OF VIRAL HEPATITIS, 1990-2008

Year	Cases Reported	Cases Confirmed
1990	2768	805
1991	3949	1333
1992	6895	2216
1993	1153	1283
1994	2926	1012
1995	3385	954
1996	3690	1458
1997	3830	1394
1998	2814	426
1999	1617	596
2000	1486	373
2001	2034	611
2002	2931	1049
2003	2984	1194
2004	2237	765
2005	2286	921
2006	2765	1153
2007	5885	1709
2008	1930	847

ported from Kegalle RDHS division, followed by Badulla (24.3 cases) and Mannar (19.0). The incidence rates reported by Kegalle district was nearly 7 times more than corresponding national figure (Table 19). This was as a result of the outbreaks of hepatitis A occurring in this district. The outbreak reported in Kegalle district mainly affected Mawanella and Aranayake Medical Officer of Health (MOH) areas, which subsequently spread to the adjacent MOH areas. Table 20 presents the confirmed cases of viral hepatitis received by the Epidemiology Unit from 2003 to 2008. Not all notified cases have been subjected to a field investigation, following which only confirmation is possible, due to the inability to trace, mostly as a result of incorrect or incomplete address.

TABLE 19: DISTRIBUTION OF NOTIFIED CASES OF VIRAL HEPATITIS BY RDHS DIVISION, 2008

RDHS	Notified cases		
	No.	%	Rate per 100,000 population
Colombo	118	6.1	4.8
Gampaha	200	10.4	8.4
Kaluthara	48	2.5	4.2
Kandy	134	6.9	9.9
Matale	31	1.6	6.5
Nuwara Eliya	109	5.6	14.8
Galle	08	0.4	0.8
Hambantota	17	0.9	3.0
Matara	15	0.8	1.9
Jaffna*	46	2.4	12.3
Kilinochchi*	02	0.1	1.2
Mannar*	17	0.9	19.0
Vavuniya*	05	0.3	2.8
Mullativu*	10	0.5	5.4
Batticaloa*	95	4.9	12.4
Ampara*	16	0.8	5.7
Trincomalee*	15	0.8	3.8
Kurunegala	89	4.6	5.8
Puttalama	34	1.8	4.3
Anuradhapura	16	0.8	2.0
Polonnaruwa	23	1.2	5.7
Badulla	201	10.4	24.3
Moneragala	63	3.3	14.0
Ratnapura	65	3.4	5.9
Kegalle	523	27.1	64.1
Kalmunai*	30	1.6	8.7
SRI LANKA	1930	100.0	9.4

* Population in 2007 has been used for calculation of incidence rate in these RDHS divisions

TABLE 20: DISTRIBUTION OF CONFIRMED CASES OF VIRAL HEPATITIS BY RDHS DIVISION, 2001-2008

District	2003		2004		2005		2006		2007		2008	
	No	%	No	%	No	%	No	%	No	%	No	%
Colombo	55	4.6	38	5.0	41	4.5	15	1.3	46	2.7	21	2.5
Gampaha	150	12.6	104	13.6	70	7.6	68	5.9	95	5.6	39	4.6
Kalutara	64	5.4	31	4.1	19	2.1	28	2.4	48	2.8	23	2.7
Kandy	160	13.4	69	9.0	53	5.8	55	4.8	234	13.7	43	5.1
Matale	157	13.1	20	2.6	7	0.8	13	1.1	70	4.1	11	1.3
Nuwara-Eliya	26	2.2	9	1.2	6	0.7	111	9.6	101	5.9	19	2.2
Galle	21	1.8	3	0.4	5	0.5	4	0.3	7	0.4	4	0.5
Hambantota	10	0.8	3	0.4	8	0.9	33	2.9	7	0.4	7	0.8
Matara	5	0.4	6	0.8	3	0.3	1	0.1	5	0.3	2	0.2
Jaffna	18	1.5	31	4.1	22	2.4	22	1.9	18	1.1	16	1.9
Vavuniya	0	0.0	2	0.3	1	0.1	0	0.0	0	0.0	2	0.2
Ampara	7	0.6	7	0.9	10	1.1	3	0.3	0	0.0	1	0.1
Batticaloa	77	6.4	55	7.2	104	11.3	79	6.9	593	34.7	43	5.1
Trincomalee	38	3.2	190	24.8	157	17.0	116	10.1	26	1.5	9	1.1
Kurunegala	38	3.2	18	2.4	23	2.5	27	2.3	31	1.8	58	6.8
Puttalam	11	0.9	11	1.4	13	1.4	7	0.6	7	0.4	6	0.7
Anuradhapura	29	2.4	14	1.8	23	2.5	33	2.9	11	0.6	1	0.1
Polonnaruwa	25	2.1	8	1.0	18	2.0	11	1.0	24	1.4	11	1.3
Badulla	36	3.0	20	2.6	9	1.0	28	2.4	56	3.3	52	6.1
Monaragala	23	1.9	28	3.7	19	2.1	36	3.1	36	2.1	33	3.9
Kegalle	229	19.2	71	9.3	76	8.3	296	25.7	184	10.8	415	49.0
Ratnapura	12	1.0	9	1.2	29	3.1	97	8.4	50	2.9	20	2.4
Kilinochchi	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Mullativu					0	0.0	0	0.0	0	0.0	0	0.0
Mannar	3	0.3	17	2.2	3	0.3	2	0.2	3	0.2	1	0.1
Kalmunai					202	21.9	68	5.9	57	3.3	10	1.2
Total	1194	100	765	100	921	100	1153	100	1709	100	847	100

FIGURE V: DISTRIBUTION OF CONFIRMED VIRAL HEPATITIS CASES BY MONTH 2006-2008

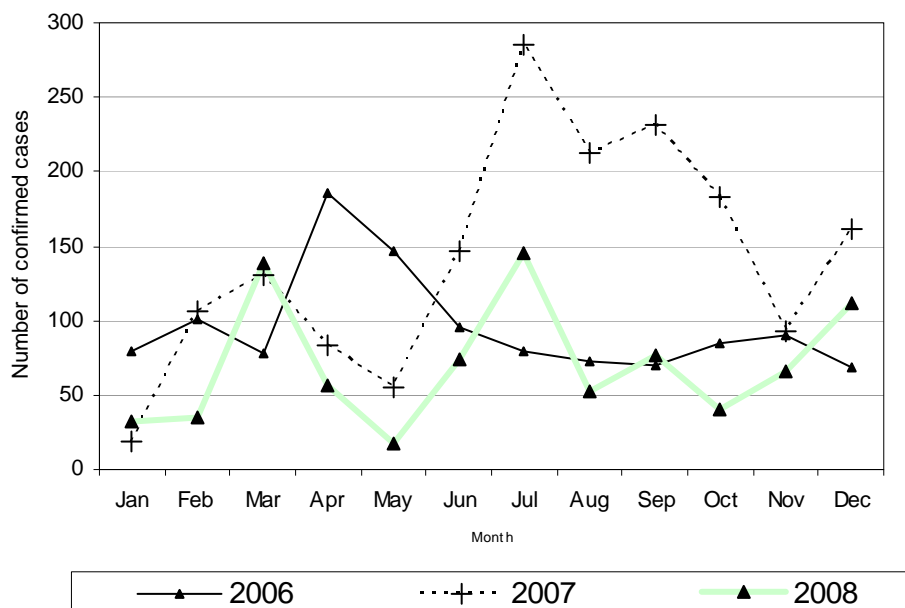


TABLE 21: DISTRIBUTION OF CONFIRMED CASES OF VIRAL HEPATITIS BY AGE GROUP, 2001-2008

Age Group	2001		2002		2003		2004		2005		2006		2007		2008	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<1 yrs	1	0.2	0	0.0	3	0.3	0	0	3	0.3	1	0.1	0	0.0	0.0	0.0
1-14 yrs	281	46.0	442	42.1	474	39.7	383	50.1	528	57.3	504	43.7	823	48.1	246	29.0
15-24 yrs	153	25.0	351	33.5	388	32.5	190	24.8	207	22.5	354	30.7	475	27.8	307	36.2
25-44 yrs	123	20.1	191	18.2	269	22.5	135	17.6	149	16.2	239	20.7	345	20.2	234	27.7
45-64 yrs	34	5.6	47	4.5	55	4.6	36	4.7	27	2.9	37	3.2	53	3.1	53	6.3
> 65 yrs	19	3.1	18	1.7	5	0.4	12	1.6	7	0.8	10	0.9	13	0.8	7	0.8
Un-known							9	1.2			8	0.7				
Total	611	100	1049	100	1194	100	765	100	921	100	1153	100	1709	100	847	100

TABLE 22: DISTRIBUTION OF CONFIRMED CASES OF VIRAL HEPATITIS BY SEX, 2001-2007

Sex	2001		2002		2003		2004		2005		2006		2007		2008	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Male	352	57.6	620	59.1	892	74.7	439	57.4	513	55.7	707	61.3	1006	58.9	558	65.9
Female	259	42.4	429	40.9	302	25.3	326	42.6	408	44.3	445	38.6	703	41.1	289	34.1
Unknown											1	0.1				
Total	611	100	1049	100	1194	100	765	100	921	100	1153	100	1709	100	847	100

No specific seasonal pattern can be identified in the distribution of confirmed cases for years 2004 to 2008, presented in Figure V.

The age distribution of confirmed cases of viral hepatitis for the years 2001 - 2008 is given in Table 21. Age group 15- 24 years is the most affected in 2008, whereas in previous years Age group 1-14 year has been the most affected group. A subsequent decline in incidence is observed with advancing age. This indicates that Sri Lankan population is exposed to viral hepatitis in early life, a finding observed in other less developed countries as well. Male to female sex ratio of those affected in 2008 is 1.9:1 (Table 22).

Prevention and Control

The primary health care team is responsible for carrying out prevention and control activities related to viral hepatitis in their respective areas. They are expected to identify high risk areas based on disease incidence and existence of other risk factors and target these areas for their interventions.

Apart from the routine investigation to be carried out, a special investigation for each suspected or confirmed case of viral hepatitis needs to be carried out. The objective of introduction of special investigation form was to obtain necessary epidemiological information to carry out early prevention and control activities, particularly at the district and divisional levels.

It is the responsibility of the Regional Epidemiologists to monitor and evaluate this activity at the divisional and district levels. It is also the responsibility of the Regional Epidemiologists to ensure

that special investigation forms are available at all the MOH offices all the time. This will minimize delay in investigation and avoid duplication of field work for routine investigation (H 399, H411 & H411a) and special investigations.

MOHs are advised to send these investigated special investigation forms to the Regional Epidemiologist, not to the Epidemiology Unit direct. The purpose of sending special investigation reports of viral hepatitis to the Regional Epidemiologist is to provide an opportunity to use this information for the disease surveillance at the district level. The Regional Epidemiologists should send these special investigation forms to the Epidemiology Unit monthly with a consolidated report.

As the commonest type of viral hepatitis affecting Sri Lanka is hepatitis A, ensuring provision of safe water and proper sanitary facilities should be identified as priorities for preventive and control strategies at the field level.

In Sri Lanka, prevalence of hepatitis B and C has been low, different studies reporting rates ranging from 0.27% - 2.5% for the former and from 0.56% to 0.97% for the latter.

Vaccination against hepatitis B, among other interventions, has been used as a major prevention strategy.

Currently all infants in the country are targeted for vaccination under the Expanded Programme on Immunization. In addition, the vaccine is provided for those who are at a higher risk of contracting the disease.

Table 23.

23. SUMMARY OF NOTIFIABLE DISEASES – 3RD QUARTER 2009

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	0	72	1402	4	75	10	0	552	1	5	0	1	55
Gampaha	0	2	34	1557	4	10	12	1	139	0	1	1	1	137
Kalutara	0	2	129	633	2	7	22	0	234	0	4	0	0	55
Kandy	0	1	50	1447	1	7	4	0	40	3	0	0	41	75
Matale	0	1	45	794	0	3	7	0	61	0	2	0	2	72
Nuwara Eliya	0	1	96	108	1	31	16	0	10	3	2	0	23	34
Galle	0	1	99	294	1	1	23	1	66	0	6	0	8	19
Hambantota	0	0	28	289	2	1	8	0	13	1	7	0	32	25
Matara	0	1	60	443	0	2	1	0	57	0	9	0	49	35
Jaffna	0	0	31	9	0	61	2	0	0	1	4	0	2	67
Kilinochchi	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mannar	0	0	36	1	0	21	0	0	0	0	0	0	0	20
Vavuniya	0	0	336	55	22	498	0	0	4	59	0	0	4	797
Mullaitivu	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batticaloa	0	0	73	147	0	8	9	3	1	0	3	1	2	9
Ampara	0	0	27	72	0	7	3	0	3	0	0	0	2	23
Trincomalee	0	0	60	53	2	5	1	0	1	2	0	0	5	43
Kurunegala	0	3	88	1207	2	22	10	0	44	4	6	2	21	89
Puttalam	0	1	48	281	0	9	2	0	33	0	1	0	5	31
Anuradhapura	0	0	37	155	1	3	35	2	8	4	7	0	2	144
Polonnaruwa	0	0	51	73	2	5	3	0	9	0	2	0	9	48
Badulla	0	0	114	136	3	12	9	0	34	1	2	1	54	78
Moneragala	0	0	69	71	1	8	9	1	1	0	3	0	19	47
Ratnapura	0	1	115	996	5	11	12	0	148	1	10	0	11	101
Kegalle	0	1	70	1326	4	18	1	0	106	2	0	0	11	102
Kalmunai	0	0	28	70	0	6	2	0	3	0	2	0	1	8
TOTAL	0	15	1796	11617	57	831	201	8	1567	82	76	5	305	2114

No polio cases. (from AFP surveillance system).

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This document is available on the internet 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:

The Editor, Quarterly Epidemiological Bulletin

ON STATE SERVICE

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