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## 1. POLIOMYELITIS

Twenty three (23) Acute Flaccid Paralysis cases were notified to the Epidemiology Unit during the 4<sup>th</sup> quarter 2007. In comparison during the 4<sup>th</sup> quarter of 2006 and 2005, 29 and 31 AFP cases were reported respectively. The reported number of cases at completion of the 4<sup>th</sup> quarter 2007 does not reach the expected number of AFP cases according to WHO surveillance criteria. Fifty six (56) AFP cases are expected for a year, to make up a non-polio AFP rate of 1 per 100,000 children under 15-year. At completion of this year by the end of this quarter, 87 AFP cases have been reported which yielded a higher rate of 1.6.

### Notification of AFP Cases from Hospitals

Teaching Hospital Kandy has reported the highest number of cases (6 i.e.26%) for the quarter out of the 55 sentinel sites in the country. Lady Ridgeway Children's Hospital (LRH), Colombo, has reported the majority of cases (4, i.e.17%). LRH, the main sentinel site for AFP, is a tertiary care centre which receives referrals from other hospitals in the country. Jaffna from the Northern Province of the country reported 2 AFP cases for the quarter. Other hospitals that notified the AFP cases in the 4<sup>th</sup> quarter are as follows:

| Hospital       | No. of cases |
|----------------|--------------|
| NHSL           | 3            |
| GH Badulla     | 1            |
| TH Peradeniya  | 2            |
| GH Matara      | 1            |
| TH Karapitiya  | 1            |
| BH Diyatalawa  | 1            |
| GH Polonnaruwa | 1            |
| BH Karawanella | 1            |

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

Nuwara Eliya district in the Central Province had reported the highest number of AFP cases, (4) for the quarter. Badulla of Uva Province reported 3 cases. From the Northern Province, both Jaffna and Vavuniya districts reported AFP cases (2 and 1 respectively) within the quarter. However all the districts in the Eastern province failed to report any cases in this quarter. Several other districts in the country including Colombo did not report AFP cases for the quarter. All heads of sentinel sites in these districts were sent reminders to strengthen AFP surveillance activities. 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

During the 4<sup>th</sup> quarter 2007, the highest number of AFP cases were reported in the month of

November (11 cases i.e.48%). This is in comparison to the same quarter last year where the highest number of cases was recorded in November. Both October and December 2007, recorded 6 (26%) cases each.

Table 1

### GEOGRAPHICAL DISTRIBUTION OF AFP CASES 4<sup>TH</sup> QUARTER 2007

| Province      | District    | MOH Area       | Number of AFP cases |
|---------------|-------------|----------------|---------------------|
| Western       | Gampaha     | Kelaniya       | 1                   |
|               |             | Katana         | 1                   |
| Southern      | Galle       | Karanadeniya   | 1                   |
|               |             | Dikwella       | 1                   |
|               | Matara      | Matara MC      | 1                   |
|               |             | Hambantota     | Tissamaharama       |
| Central       | Kandy       | Kandy MC       | 1                   |
|               |             | Nuwara Eliya   | Walapane            |
|               |             | Maskeliya      | 2                   |
|               |             | Rikillagaskada | 1                   |
| Sabara gamuwa | Ratnapura   | Pelmadulla     | 1                   |
|               |             | Eheliyagoda    | 1                   |
|               | Kegalle     | Yatiantota     | 1                   |
|               |             | Kegalle        | 1                   |
| North Western | Kurunegala  | Aranayake      | 1                   |
| North Central | Polonnaruwa | Dimbulagala    | 1                   |
| Uva           | Badulla     | Giradurukotte  | 1                   |
|               |             | Badulla        | 1                   |
|               |             | Haputale       | 1                   |
| Northern      | Jaffna      | Vavuniya       | 1                   |
|               |             | Kopai          | 1                   |
|               |             | Jaffna MC      | 1                   |

### Distribution of AFP Cases by Age and Sex

Majority of AFP cases (17 i.e.74%) reported in the 4<sup>th</sup> quarter 2007 were older children aged between 5-15 years. Similarly in the in the 4<sup>th</sup> quarter of the previous year 61% of cases were in this age group. In 2007 4<sup>th</sup> quarter, eight (35%) and 9 (39%) children belonged to 5 - 9 year and 10 -15 year age groups respectively and there were no cases aged less than 1 year.

Over half (52%) of the AFP cases (12) in the 4<sup>th</sup> quarter 2007 were males. This is similar to the 4<sup>th</sup> quarter 2006 where the majority of the cases were also males (16 i.e.57%). Table 2 shows the age and sex distribution of AFP cases in 4<sup>th</sup> quarter 2007.

Table 2

**DISTRIBUTION OF AFP CASES BY AGE AND SEX  
4<sup>TH</sup> QUARTER 2007**

| Age Group      | Sex  |        | Total |
|----------------|------|--------|-------|
|                | Male | Female |       |
| <1 year old    | 0    | 0      | 0     |
| 1-4 year old   | 2    | 4      | 6     |
| 5-9 year old   | 6    | 2      | 8     |
| 10-15 year old | 4    | 5      | 9     |
| Total          | 12   | 11     | 23    |

**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'.

Twenty cases out of the 23 AFP cases (87%) reported in the 4<sup>th</sup> quarter 2007 had two timely stool samples sent to MRI for polio virology. Only two cases reported had stool samples collected late from respective institutions. Medical Research Institute did not receive any stool samples from one AFP case reported from Teaching Hospital Jaffna.

**National Polio Expert Committee**

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 of the year to discuss AFP cases that could not be discarded on laboratory results. In 4<sup>th</sup> quarter 2007, the Expert Committee met and discussed the summary of activities of the AFP surveillance programme since there were no AFP cases to be reviewed by the committee. All cases which had stool samples collected late with negative virology results had no persistent residual paralysis.

**2. CHOLERA**

No confirmed cases of cholera were reported to the Epidemiology Unit during the 4<sup>th</sup> quarter and the previous quarter, 2007 or the corresponding quarter of 2006.

**3. TETANUS**

During the 4<sup>th</sup> quarter 2007, 12 tetanus cases were notified to the Epidemiology Unit. This is in comparison to 8 cases each reported during the previous quarter and the corresponding quarter of 2006.

Eight cases were investigated and confirmed as tetanus during the current quarter, out of which four cases had been fatal.

No cases of neonatal tetanus were reported during the quarter.

Table 3

**SELECTED CHARACTERISTICS OF CONFIRMED  
CASES OF TETANUS – 4<sup>TH</sup> QUARTER 2007**

(N = 08)

|                     |               |    |
|---------------------|---------------|----|
| Sex                 | Male          | 5  |
|                     | Female        | 3  |
| Age group           | < 1           | 0  |
|                     | 1-5           | 1  |
|                     | >5            | 7* |
| District            | Colombo       | 1  |
|                     | Kalutara      | 1  |
|                     | Kandy         | 1  |
|                     | Ratnapura     | 1  |
|                     | Anuradhapura  | 2  |
|                     | Trincomalee   | 2  |
| Immunization status | Immunized     | 1  |
|                     | Non immunized | 3  |
|                     | Unknown       | 4  |

\* Adults aged between 42 and 85 years

**4. MEASLES**

During the 4<sup>th</sup> quarter 2007, 18 cases of measles were notified to the Epidemiology Unit compared to 22 cases notified during the previous quarter and 09 cases in the corresponding quarter of last year.

Four cases were investigated and confirmed as measles during the 4<sup>th</sup> quarter 2007 (Table 4).

Table 4

**SELECTED CHARACTERISTICS OF CONFIRMED  
CASES OF MEASLES – 4<sup>TH</sup> QUARTER 2007**

(N = 04)

|                     |               |   |
|---------------------|---------------|---|
| Sex                 | Male          | 2 |
|                     | Female        | 2 |
| Age group           | < 1           | 0 |
|                     | 1-5           | 0 |
|                     | >5*           | 4 |
| District            | Kandy         | 1 |
|                     | Galle         | 1 |
|                     | Polonnaruwa   | 1 |
|                     | Ampara        | 1 |
| Immunization status | Immunized     | - |
|                     | Non immunized | 2 |
|                     | unknown       | 2 |

\* adults over 18 years

**5. LEPTOSPIROSIS**

In the 4<sup>th</sup> quarter 2007, 1099 leptospirosis cases were notified to the Epidemiology Unit compared to 349 cases in the previous quarter and 281 cases during the corresponding quarter of 2006. During the current quarter majority of the cases were reported from the districts of Kegalle (157 cases i.e. 14%) and Gampaha (142 cases i.e. 13%). Among the reported cases 494 were confirmed as leptospirosis by the special investigation received from the 15 hospitals identified as sentinel sites in the high endemic areas and 17 deaths were among them.

Analysis of special investigations showed that 26% of the cases were in the age group 40-44 years and male female ratio was 9:1.

## 6. HUMAN RABIES

Fifteen (15) cases of human rabies were notified to the Epidemiology Unit in the 4<sup>th</sup> quarter 2007, compared to 15 cases in the previous quarter and 26 cases in the corresponding quarter of year 2006. Distribution of cases by district is given in Table 29.

### Animal Rabies

During the quarter 153 dogs were reported positive for rabies compared to 168 in the previous quarter and 189 in the corresponding quarter of 2006. In addition the following animals were also reported positive;

Cats-11, Wild animals- 02, cows -03

### Rabies Control Activities\*

**Dog vaccination** - A total of 215055 dogs were immunized during the 4<sup>th</sup> quarter 2007 when compared to 182498 in the previous quarter and 236571 in the corresponding quarter of last year.

**Birth Control Activities** - 27807 free roaming female dogs were injected with Progesterone and 1523 female dogs were sterilized by surgical method. In comparison Progesterone injection was administered to 20589 female dogs and 49 sterilizations were carried out during the previous quarter .

\*Source – Director/PHVS

## 7. ENTERIC FEVER

In the 4<sup>th</sup> quarter 2007, a total of 506 cases of enteric fever were notified to the Epidemiology Unit, compared to 341 cases in the previous quarter and 453 cases in the corresponding quarter of 2006. Jaffna district reported the highest number of cases (86 cases i.e. 17%) (Table 29).

The MOH areas Tellipalai and Mannar , notified a large number of cases (43 cases each) during the quarter under review.

## 8. VIRAL HEPATITIS

In the 4<sup>th</sup> quarter 2007, 868 cases of viral hepatitis were reported to the Epidemiology Unit, compared to 2019 cases in the previous quarter and 635 cases in the corresponding quarter of 2006.

Among the reported cases, 272 were investigated and confirmed as viral hepatitis. RDHS area Batticaloa notified the highest number of cases (133) accounting for 15% of the total case load followed by Kandy (130 cases i.e.15%) and Badulla (107 cases i.e. 12%).The MOH areas Haldamulla (46 cases i.e. 5%) in the Badulla district, Gampola (35 cases i.e. 4% ) in the Kandy district, Kalavanchikudy (32 cases i.e. 4%) in the Batticaloa district and Aranayaka (29 cases i.e. 3%) in the Kegalle district have reported the highest number of cases.

## 9. DYSENTERY

In the 4<sup>th</sup> quarter 2007, 1905 cases of dysentery were notified to the Epidemiology Unit, compared to 1768 cases in the previous quarter and 2748 cases in the corresponding quarter of 2006.

The MOH areas Dehiattakandiya(49), Kekirawa (44), Thampalagama(41) and Dimbulagala(41), notified the highest number of cases.

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

During the 4<sup>th</sup> quarter 2007 , 44 cases of Encephalitis were reported to the Epidemiology Unit. Among the reported cases, 10 cases were investigated and 3 were found to be clinically confirmed as JE. No death was reported during the quarter.

This is in comparison to 39 cases and one death reported during the previous quarter and 41 cases and one death reported in the corresponding quarter of 2006.

Table 5

**DISTRIBUTION OF JAPANESE ENCEPHALITIS CASES BY RDHS/ MOH DIVISION - 4TH QUARTER 2007**

| RDHS Area    | MOH Area    | Cases    | Deaths   |
|--------------|-------------|----------|----------|
| Gampaha      | Attanagalla | 1        | 0        |
| Ratnapura    | Eheliyagoda | 1        | 0        |
| Kegalle      | Warakapola  | 1        | 0        |
| <b>Total</b> |             | <b>3</b> | <b>0</b> |

## 11. MALARIA

During the 4<sup>th</sup> quarter 2007, there was a significant reduction in the incidence of malaria in comparison to the same period of 2006 as seen in Table 6. Distribution of malaria cases by RMO division is shown in Table 7.

Source : Anti Malaria Campaign

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

During the 4<sup>th</sup> quarter 2007 , 2974 cases of DF/ DHF and 6 deaths were reported (CFR 0.2%) when compared to 1953 cases and 8 deaths (CFR 0.4%) reported during the previous quarter and 3956 cases and 15 deaths (CFR 0.37%) 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.

During the 4<sup>th</sup>quarter 2007 , 739 blood samples were tested using Ig M capture ELISA test and Haemagglutination Inhibition test at the Department of Virology, MRI and 324 samples were confirmed as positive.

Table 6

**RESULTS OF BLOOD SMEAR EXAMINATION FOR MALARIA PARASITES - 4<sup>TH</sup> QUARTER 2006/2007**

|                                | 4 <sup>th</sup> Quarter 2006 | 4 <sup>th</sup> Quarter 2007 |
|--------------------------------|------------------------------|------------------------------|
| No. of blood smears examined   | 293,490                      | 256,990                      |
| No. of positives               | 112                          | 25                           |
| No. of <i>P. vivax</i>         | 106                          | 23                           |
| No. of <i>P. falciparum</i>    | 4                            | 1                            |
| No. of mixed infections        | 0                            | 1                            |
| No. of infant positives        | 2                            | 0                            |
| Slide positivity rate (S.P.R.) | 0.04%                        | 0.01%                        |
| P.v. : P.f. ratio              | 26:1                         | 23:1                         |
| Percentage of infant positives | 1.79%                        | 0%                           |

Table 7

**DISTRIBUTION OF MALARIA CASES BY RMO DIVISION - 4<sup>TH</sup> QUARTER 2007**

| RDHS Division | Blood smears  | Positives | P.v.      | P.f./ Mixed |
|---------------|---------------|-----------|-----------|-------------|
| Colombo       | 16006         | 0         | 0         | 0           |
| Gampaha       | 8844          | 1         | 1         | 0           |
| Kalutara      | 2664          | 0         | 0         | 0           |
| Kandy         | 6600          | 0         | 0         | 0           |
| Matale        | 3065          | 0         | 0         | 0           |
| Nuwara Eliya  | 16            | 0         | 0         | 0           |
| Galle         | 249           | 0         | 0         | 0           |
| Matara        | 4384          | 0         | 0         | 0           |
| Hambantota    | 8544          | 1         | 1         | 0           |
| Jaffna        | 28783         | 0         | 0         | 0           |
| Kilinochchi   | 6788          | 0         | 0         | 0           |
| Mannar        | 2765          | 0         | 0         | 0           |
| Vavuniya      | 9243          | 0         | 0         | 0           |
| Mullativu     | 4892          | 0         | 0         | 0           |
| Batticaloa    | 13475         | 0         | 0         | 0           |
| Ampara        | 7278          | 3         | 3         | 0           |
| Trincomalee   | 20242         | 7         | 7         | 0           |
| Kurunegala    | 19346         | 4         | 4         | 0           |
| Maho          | 8983          | 1         | 0         | 1           |
| Puttalam      | 7708          | 0         | 0         | 0           |
| Anuradhapura  | 27989         | 1         | 1         | 0           |
| Polonnaruwa   | 17025         | 0         | 0         | 0           |
| Badulla       | 4776          | 0         | 0         | 0           |
| Moneragala    | 9942          | 4         | 4         | 0           |
| Ratnapura     | 4264          | 3         | 2         | 1           |
| Kegalle       | 1630          | 0         | 0         | 0           |
| Kalmunai      | 11489         | 0         | 0         | 0           |
| <b>TOTAL</b>  | <b>256990</b> | <b>25</b> | <b>23</b> | <b>2</b>    |

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

Table 8

**MORBIDITY AND MORTALITY DUE TO DF/DHF - 4<sup>TH</sup> QUARTER 2007**

| RDHS Division | Cases       | Percentage | Deaths   |
|---------------|-------------|------------|----------|
| Colombo       | 699         | 23.5       | 3        |
| Gampaha       | 495         | 16.6       | 0        |
| Kalutara      | 142         | 4.8        | 0        |
| Kandy         | 100         | 3.4        | 1        |
| Matale        | 40          | 1.3        | 1        |
| Nuwara Eliya  | 7           | 0.2        | 0        |
| Galle         | 27          | 0.9        | 0        |
| Hambantota    | 42          | 1.4        | 0        |
| Matara        | 100         | 3.4        | 0        |
| Jaffna        | 198         | 6.7        | 0        |
| Kilinochchi   | 0           | 0.0        | 0        |
| Mannar        | 0           | 0.0        | 0        |
| Vavuniya      | 24          | 0.8        | 0        |
| Mullativu     | 0           | 0.0        | 0        |
| Batticaloa    | 6           | 0.2        | 0        |
| Ampara        | 2           | 0.1        | 0        |
| Trincomalee   | 12          | 0.4        | 0        |
| Kurunegala    | 292         | 9.8        | 0        |
| Puttalam      | 265         | 8.9        | 0        |
| Anuradhapura  | 127         | 4.3        | 0        |
| Polonnaruwa   | 14          | 0.5        | 0        |
| Badulla       | 33          | 1.1        | 0        |
| Moneragala    | 23          | 0.8        | 0        |
| Ratnapura     | 123         | 4.1        | 1        |
| Kegalle       | 197         | 6.6        | 0        |
| Kalmunai      | 6           | 0.2        | 0        |
| <b>TOTAL</b>  | <b>2974</b> | <b>100</b> | <b>6</b> |

## 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 4<sup>th</sup> quarter 2007 are given in Table 9.

Surveillance activities were carried out in locations identified as 'high-risk' by the respective MOH 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 9

### AEDES LARVAL DENSITIES (BRETEAU INDEX) IN COLOMBO AND GAMPAHA DISTRICTS - 4<sup>TH</sup> QUARTER 2007

| MOH Area    | October |      | November |      | December |      |
|-------------|---------|------|----------|------|----------|------|
|             | A       | B    | A        | B    | A        | B    |
| Nugegoda    | 7.3     | 2.0  | 11.5     | 5.3  | 8        | 17.6 |
| Maharagama  | 3.0     | 4.0  | 3.0      | 15.0 | 0        | 11.2 |
| Homagama    | 6.3     | 16.0 | 4.0      | 12.0 | 2        | 10.0 |
| Moratuwa    | 10.4    | 4.8  | 14.6     | 5.3  | 8        | 2    |
| Kaduwela    | 7.5     | 24   | 1.6      | 24.8 | 7.3      | 20.6 |
| Dehiwala    | 5.3     | 8.0  | 6.7      | 4.0  | 6.4      | 9.6  |
| Piliyandala | 1.1     | 13.7 | 0        | 12.0 | 1.1      | 17.1 |
| Kelaniya    | 8.9     | 21.2 | 1.3      | 9.3  | 4.8      | 16   |
| Ragama      | 0.6     | 14.8 | 2.3      | 6.0  | 0        | 4.0  |
| Ja-Ela      | 6.9     | 10.8 | 3.6      | 12.9 | 2.4      | 2.0  |
| Minuwan-    | 0       | 27.2 | 0        | 16.0 | 0        | 23.4 |
| Mirigama    | 2.7     | 3.01 | 3.1      | 24.0 | 1.5      | 9.6  |
| Gampaha     | -       | -    | 0        | 22   | 1.0      | 20   |

(A) = *Aedes aegypti*  
(B) = *Aedes albopictus*

Number of premises examined per area = 300

## 13. TUBERCULOSIS

A total of 2250 tuberculosis patients were registered for 4<sup>th</sup> quarter 2007 by the National Programme for Tuberculosis Control and Chest Diseases. Of this total, 1737 suffered from pulmonary disease, and the balance, 513 patients from non-pulmonary disease. During the quarter 2273 cultures were done in the central laboratory and, 1152 of these patients were bacteriologically confirmed with a bacteriological confirmation rate of 66.32%. Seven hundred and ninety nine (799) TB patients and 1180 other patient were hospitalized during the quarter.

The distribution of tuberculosis patients by RDHS division is given in Table 10.

### B.C.G. vaccination

A total of 98435 B.C.G. vaccinations were carried out during the quarter with 104% coverage.

Table 10.

### TUBERCULOSIS PATIENTS BY RDHS DIVISIONS - 4<sup>TH</sup> QUARTER 2007

| RDHS DIVISION | PTB         | EPTB       | Total       | Pulmonary TB Direct Smear |             |
|---------------|-------------|------------|-------------|---------------------------|-------------|
|               |             |            |             | No. +VE                   | %           |
| Colombo       | 342         | 94         | 436         | 262                       | 76.6        |
| Gampaha       | 130         | 54         | 184         | 108                       | 83.1        |
| Kalutara      | 126         | 36         | 162         | 95                        | 75.4        |
| Kandy         | 184         | 57         | 241         | 94                        | 51.1        |
| Matale        | 33          | 15         | 48          | 25                        | 75.8        |
| Nuwara Eliya  | 51          | 9          | 60          | 30                        | 58.8        |
| Galle         | 76          | 25         | 101         | 51                        | 67.1        |
| Hambantota    | 18          | 11         | 29          | 14                        | 77.8        |
| Matara        | 51          | 13         | 64          | 32                        | 62.8        |
| Jaffna        | 171         | 21         | 192         | 48                        | 28.1        |
| Vavunia       | 12          | 1          | 13          | 6                         | 50.0        |
| Kilinochchi   | 2           | 0          | 2           | 1                         | 50.0        |
| Mannar        | 3           | 0          | 3           | 1                         | 33.3        |
| Mullativu     | 2           | 0          | 2           | 2                         | 100.0       |
| Ampara        | 20          | 9          | 29          | 13                        | 65.0        |
| Batticaloa    | 40          | 13         | 53          | 25                        | 62.5        |
| Trincomalee   | 20          | 2          | 22          | 12                        | 60.0        |
| Kurunegala    | 83          | 37         | 120         | 70                        | 84.3        |
| Puttalam      | 37          | 13         | 50          | 32                        | 86.5        |
| Anuradhapura  | 59          | 18         | 77          | 44                        | 74.6        |
| Polonnaruwa   | 28          | 9          | 37          | 21                        | 75.0        |
| Badulla       | 46          | 20         | 66          | 32                        | 69.6        |
| Monaragala    | 21          | 7          | 28          | 14                        | 66.7        |
| Kegalle       | 97          | 19         | 116         | 75                        | 77.3        |
| Ratnapura     | 28          | 25         | 53          | 22                        | 78.6        |
| Kalmunai      | 57          | 5          | 62          | 23                        | 40.4        |
| <b>Total</b>  | <b>1737</b> | <b>513</b> | <b>2250</b> | <b>1152</b>               | <b>66.3</b> |

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

## 14. LEPROSY

### QUARTERLY RETURN OF LEPROSY STATISTICS - 4<sup>TH</sup> QUARTER 2007

Table 11.

#### 1. National

|                       | At the end of the quarter    |                              |           | Cumulative for end of the quarter |                              |           |
|-----------------------|------------------------------|------------------------------|-----------|-----------------------------------|------------------------------|-----------|
|                       | 4 <sup>th</sup> quarter 2007 | 4 <sup>th</sup> quarter 2006 | Diff. (%) | 4 <sup>th</sup> quarter 2007      | 4 <sup>th</sup> quarter 2006 | Diff. (%) |
| New patients detected | 490                          | 403                          | 21.6      | 2044                              | 2039                         | 0.3       |
| Children              | 55                           | 37                           | 48.6      | 196                               | 210                          | -6.6      |
| Grade 2 Deformities   | 28                           | 20                           | 40.0      | 118                               | 114                          | 3.5       |
| Multi-Bacillary       | 212                          | 176                          | 20.5      | 916                               | 896                          | 2.2       |
| Females               | 208                          | 178                          | 16.9      | 898                               | 904                          | -0.6      |

#### 2. Districts

| District             | New patients | Deformities | Child     | MB         | Females    |
|----------------------|--------------|-------------|-----------|------------|------------|
| Colombo              | 91           | 02          | 09        | 41         | 33         |
| Gampaha              | 59           | 01          | 10        | 24         | 32         |
| Kalutara             | 48           | 01          | 06        | 13         | 16         |
| <b>Western</b>       | <b>198</b>   | <b>04</b>   | <b>25</b> | <b>78</b>  | <b>81</b>  |
| Galle                | 16           | 02          | 01        | 10         | 09         |
| Matara               | 24           | 01          | 02        | 10         | 10         |
| Hambantota           | 14           | 02          | 01        | 06         | 06         |
| <b>Southern</b>      | <b>54</b>    | <b>05</b>   | <b>04</b> | <b>26</b>  | <b>25</b>  |
| Kandy                | 12           | 0           | 02        | 02         | 05         |
| Matale               | 08           | 01          | 0         | 04         | 02         |
| Nuwara Eliya         | 02           | 0           | 0         | 0          | 0          |
| <b>Central</b>       | <b>22</b>    | <b>01</b>   | <b>02</b> | <b>06</b>  | <b>07</b>  |
| Anuradhapura         | 13           | 01          | 02        | 04         | 05         |
| Polonnaruwa          | 18           | 02          | 03        | 08         | 06         |
| <b>North Central</b> | <b>31</b>    | <b>03</b>   | <b>05</b> | <b>12</b>  | <b>11</b>  |
| Kurunegala           | 29           | 05          | 02        | 23         | 09         |
| Puttalam             | 27           | 04          | 02        | 12         | 10         |
| <b>North Western</b> | <b>56</b>    | <b>09</b>   | <b>04</b> | <b>35</b>  | <b>19</b>  |
| Kegalla              | 08           | 01          | 02        | 04         | 03         |
| Ratnapura            | 33           | 01          | 03        | 12         | 13         |
| <b>Sabaragamuwa</b>  | <b>41</b>    | <b>02</b>   | <b>05</b> | <b>16</b>  | <b>16</b>  |
| Badulla              | 0            | 0           | 0         | 0          | 0          |
| Moneragala           | 03           | 0           | 0         | 01         | 01         |
| <b>Uva</b>           | <b>03</b>    | <b>0</b>    | <b>0</b>  | <b>01</b>  | <b>01</b>  |
| Trincomalee          | 08           | 0           | 01        | 02         | 03         |
| Batticaloa           | 42           | 03          | 06        | 19         | 27         |
| Ampara               | 09           | 0           | 01        | 03         | 03         |
| Kalmunai             | 24           | 01          | 02        | 13         | 14         |
| <b>Eastern</b>       | <b>83</b>    | <b>04</b>   | <b>10</b> | <b>37</b>  | <b>47</b>  |
| Jaffna               | 01           | 0           | 0         | 0          | 01         |
| Vavuniya             | 0            | 0           | 0         | 0          | 0          |
| Mannar               | 01           | 0           | 0         | 01         | 0          |
| Mullativu            | 0            | 0           | 0         | 0          | 0          |
| Kilinochchi          | 0            | 0           | 0         | 0          | 0          |
| <b>Northern</b>      | <b>02</b>    | <b>0</b>    | <b>0</b>  | <b>01</b>  | <b>01</b>  |
| <b>Sri Lanka</b>     | <b>490</b>   | <b>28</b>   | <b>55</b> | <b>212</b> | <b>208</b> |

Source : Anti Leprosy Campaign

## 15. SURVEILLANCE AT SEA PORT

Surveillance activities carried out by the Port Health Office at Colombo Sea Port during the 4<sup>th</sup> quarter 2007, is given below.

|  |              |
|--|--------------|
| <b>1. Yellow Fever Vaccination</b>     | <b>Total</b> |
| Total number vaccinated                | - 107        |
| <b>2. Granting Pratique to Vessels</b> |              |
| Number issued                          | - 1097       |
| <b>3. Deratting Certification</b>      |              |
| Number issued                          | - 98         |

Details of the vaccinations carried out by the Assistant Port Health Office, Colombo 8, during the 4<sup>th</sup> quarter 2007, is given below.

|                             |              |
|-----------------------------|--------------|
|                             | <b>Total</b> |
| a. Yellow fever             | 152          |
| b. Meningococcal meningitis | 494          |

## 16. SURVEILLANCE AT AIRPORT

Surveillance activities carried out at the International Airport, Katunayake during the 4<sup>th</sup> quarter 2007 is given below.

|  |       |
|--|-------|
| <b>1. Yellow Fever Surveillance</b>                                      |       |
| a. No. with valid certificate  | - 07  |
| b. No. without valid certificate & Departed                              | - -   |
| c. No. without valid certificate Isolated                                | - -   |
| <b>2. Airport Sanitation</b>   |       |
| a. No. of sanitary inspections carried out including food establishments | - 27  |
| b. No. of food samples taken under Food Act                              | - 03  |
| c. No. found defective   | - 01  |
| d. No. of court cases/prosecuted/warned                                  | - 01  |
| e. No. of water samples tested   | - 06  |
| f. No. reported contaminated   | - 02  |
| <b>3. Release of human remains</b>                                       |       |
| a. No. of human remains released   | - 104 |
| b. No. referred to JMO for post-mortem                                   | - 06  |
| c. No. alleged suicide   | - 02  |

## 17. BACTERIOLOGY REPORT - 4<sup>TH</sup> QUARTER - 2007 - MEDICAL RESEARCH INSTITUTE

Table 12.

|                                     | Oct | Nov | Dec |
|-------------------------------------|-----|-----|-----|
| <b>(A) CHOLERA</b>                  |     |     |     |
| No. of stool specimens examined     | -   | -   | -   |
| No. of El. tor cholera              | -   | -   | -   |
| Ogawa                               | -   | -   | -   |
| Inaba                               | -   | -   | -   |
| Cholera 0139                        | -   | -   | -   |
| <b>(B) SALMONELLA</b>               |     |     |     |
| No. of Blood specimens examined     | 71  | 106 | 45  |
| No. positive S. typhi               | 04  | 03  | 01  |
| S. paratyphi                        | 03  | 01  | -   |
| No. of stool specimens examined     | 71  | 58  | 32  |
| No. positive S. typhi               | -   | -   | -   |
| S. paratyphi A                      | -   | -   | -   |
| Others                              | 02  | 01  | -   |
| <b>(C) SHIGELLA</b>                 |     |     |     |
| No. of specimens examined           | 71  | 58  | 32  |
| No. positive Sh. flexneri 1         | -   | -   | -   |
| Sh. flexneri 2                      | 01  | 01  | -   |
| Sh. flexneri 3                      | -   | -   | -   |
| Sh. flexneri 4                      | -   | -   | -   |
| Sh. flexneri 5                      | -   | -   | -   |
| Sh. flexneri 6                      | -   | -   | -   |
| Sh. sonnei                          | 03  | 05  | 02  |
| Sh. dysenteriae                     | -   | -   | -   |
| <b>(D) ENTEROPATHOGENIC E. COLI</b> |     |     |     |
| No. of specimens examined           | 29  | 09  | 07  |
| No. positive Group A                | -   | -   | -   |
| <b>(E) CAMPYLOBACTER SPECIES</b>    | 04  | -   | -   |



## 18. SEXUALLY TRANSMITTED DISEASES

Table 13.

### NEW EPISODES OF STD/HIV/AIDS REPORTED OR TREATED AT STD CLINICS IN SRI LANKA\* - 4<sup>TH</sup> QUARTER 2007

| 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>                       | 17   | 17     | 34    | 65  | 54     | 119   |
| AIDS   | 5  | 6      | 11    | 22  | 18     | 40    |
| Early Syphilis <sup>2</sup>                      | 18   | 11     | 29    | 83  | 42     | 125   |
| Syphilis   | 74   | 56     | 130   | 278   | 240    | 518   |
| Congenital Syphilis <sup>4</sup>                 | 0  | 1      | 1     | 1   | 1      | 2     |
| Gonorrhoea <sup>5</sup>                          | 81   | 31     | 112   | 439   | 158    | 597   |
| Ophthalmia neonatorum <sup>6</sup>               | 1  | 3      | 4     | 5   | 7      | 12    |
| Non specific cervicitis/urethritis               | 130  | 266    | 396   | 532   | 902    | 1434  |
| Chlamydial Infection                             | 7  | 12     | 19    | 22  | 67     | 89    |
| Genital Herpes                                   | 231  | 253    | 484   | 782   | 1052   | 1834  |
| Genital Warts                                    | 165  | 113    | 278   | 650   | 445    | 1095  |
| Chancroid  | 0  | 0      | 0     | 1   | 0      | 1     |
| Trichomoniasis                                   | 0  | 42     | 42    | 8   | 157    | 165   |
| Candidiasis                                      | 195  | 341    | 536   | 826   | 1287   | 2113  |
| Bacterial Vaginosis                              |  | 236    | 236   |   | 905    | 905   |
| Other sexually transmitted diseases <sup>7</sup> | 63   | 38     | 101   | 283   | 249    | 532   |
| Non-venerial <sup>8</sup>                        | 966  | 647    | 1613  | 3609  | 2599   | 6208  |

\* - 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 inguinalae, Molluscum contagiosum, Scabies, Tinea, Hepatitis B etc.

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

## 19. SURVEILLANCE REPORT ON ADVERSE EVENTS FOLLOWING IMMUNIZATION (AEFI) - 2007

Immunization can be followed by adverse events due to the inherent properties of the vaccine (vaccine reaction), or an error in the immunization process (programme error). The event may be unrelated to the immunization, but have a temporal association (coincidental event). Anxiety-related reactions can arise from the fear or pain of the injection rather than the vaccine. In some cases the cause of the AEFI remains unknown.

Therefore AEFI could be defined as a medical incident, which occurs after an immunization and believed to be caused by the immunization. The specified event may or may not be related to immunization. Temporal relationship and suspicion of the cause and effect relationship is sufficient to label the event as an AEFI. Exclusion is based on the case investigation.

As disease incidence declines due to effective immunization programmes, the occurrence of AEFI will receive more attention. AEFI due to coincidence and programmatic errors in the storage, handling, or administration of vaccine are more common than AEFI due to the properties of vaccines (vaccine reactions).

It is difficult to be sure of the exact frequency of true adverse reactions which occur. Vaccines are mostly administered to infants and young children who are in the period of their lives when they are experiencing many illnesses. There are more health risks for the young child than for older persons. Therefore many events which occur just after vaccination may well have occurred whether or not the child had been vaccinated. These events are "coincidental". When two sets of events can both be expected to occur frequently, it may be difficult to determine whether they are causally linked. Nonetheless, it is often very difficult to explain this idea of coincidence to parents, sometimes even to the medical and health personnel, who see their child/client vaccinated one day and becomes ill the next day.

Henceforth monitoring of AEFI is important for the success of the immunization programme,

since such events can influence community acceptance of immunization. Careful surveillance and investigation of AEFI are necessary to identify causes of these events that require correction.

System for surveillance of adverse events following immunization in Sri Lanka is gradually improving since its commencement in 1996. During the initial years, focus was on the establishment of the system. However, during the last few years emphasis was on the improvement of completeness, timeliness and overall quality of the system. Further, much emphasis was put on strengthening of data analysis and taking corrective action at MOH level and district level following case investigation. At national level action was taken to strengthen the causality assessment.

As presented in Table 14 and 15, there has been a marked improvement in completeness of receipt of monthly reports from Medical Officers of Health. In 2007 out of 3516 monthly reports expected from Medical officers of Health, a total of 3417 reports were received at the Epidemiological Unit. Except from the districts of Kilinichchi, Mannar and Rathnapura, all other districts reported over 95% completeness indicating good compliance with the system by the MOOH.

However, the overall timeliness of reporting is yet to be improved. Overall timeliness of reporting for 2007 was 37.1%. Best timeliness of 62.6% was reported from Badulla the district and least timeliness (1.3 %) has been reported from the Jaffna district.

Receipt of a considerable number of "Nil" returns has caused concern because it may be an indication of poor detection and reporting of AEFI at field level in some MOH areas. Apart from notifications of AEFI from the government and private medical practitioners and by PHMM during field visits, at immunization clinics, retrospective detection and reporting of AEFI for the previous immunization is mandatory. This is a sort of active surveillance and if this activity is implemented properly, it is very unlikely to originate "Nil" monthly reports.

One thousand five hundred and seventy eight (1578) out of total 3417 monthly returns received in 2007 were "Nil" returns (46.2 %). Highest

Table 14.

### COMPLETENESS OF AEFI REPORTS RECEIVED\* AND NUMBER AND OVER ALL RATE\*\* OF AEFI REPORTED -1996 – 2007

|  | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|
| Number of Monthly Reports received         | 82   | 311  | 794  | 717  | 1220 | 2248 | 2444 | 2366 | 2845 | 2796 | 3156 | 3417 |
| Percentage of Reports Received             | 40%  | 49%  | 56%  | 57%  | 72%  | 71%  | 76%  | 74 % | 87%  | 82%  | 91%  | 97%  |
| Number and overall rate** of AEFI reported | -    | -    | 794  | 717  | 1220 | 1597 | 1825 | 2426 | 2836 | 3162 | 4184 | 6217 |
|  | -    | -    | 15.1 | 13.3 | 26.3 | 26.5 | 28.9 | 30.5 | 51.6 | 46.7 | 61.5 | 94.5 |

\* Based on AEFI monthly reports received from MOH

\*\* Per 100,000 all immunizations

number of “Nil” returns (96.3 %) was received from the Jaffna district and the lowest number of such returns (8.7 %) was from the Puttalam district. It is well evident that most districts in the North and Eastern provinces except Ampara district were forwarding over 80 % “Nil” returns, indicating that surveillance of AEFI activities is not carried out optimally in these provinces.

It is important to note that as data presented in Table 14, with the gradual improvement in completeness of reporting, number and rate of AEFI reported also has improved over the years. It has increased from a mere 794 (15.1 per 100,000 immunizations) AEFI in 1996 to 6217 AEFI (94.5 per 100,000 immunizations) in 2007. Henceforth, this increase in number and rate of AEFI reported over the years should not be considered as increased occurrence of AEFI or poor quality of immunization programme but due to improved detection and reporting.

Comparative distribution of number and crude rates of AEFI, abscess formation, severe local

reactions and percentage of abscess formation and severe local reactions in comparison to total AEFI by RDHS Divisions for 2007 are given in Table 16. There is a wide variation in both numbers and rates of AEFI reported across the RDHS divisions. The highest number of AEFI has been reported from the Colombo RDHS division and the highest rate of AEFI has been reported from the Hambantota RDHS division. It is important to note that these two RDHS divisions have a high completeness rate in monthly reporting and a fairly low proportion of “Nil” reports.

It is also interesting to note that districts reporting comparatively high numbers and rates of AEFI (Colombo, Gampaha, and Hambantota) have reported significantly low proportion of abscesses when compared with the districts reporting a lesser number of AEFI (Kalmunai, Trincomalee, Mannar). These were the districts who reported higher proportion of “Nil” returns indicating poorly established AEFI surveillance system.

Table 15.

**COMPLETENESS AND TIMELINESS OF MONTHLY REPORTING AND RECEIPT OF “NIL” REPORTS OF AEFI BY RDHS DIVISIONS - 2007**

| RDHS Division    | MOH Areas  | Reports Expected | Total Reports Received | Re-Reports % | Timely Reports Received |             | “Nil” Reports Received |             |
|------------------|------------|------------------|------------------------|--------------|-------------------------|-------------|------------------------|-------------|
|                  |            |                  |                        |              | No                      | %           | No                     | %           |
| Colombo          | 14         | 168              | 166                    | 98.8         | 57                      | 34.3        | 21                     | 12.7        |
| Gampaha          | 15         | 180              | 179                    | 99.4         | 67                      | 37.4        | 20                     | 11.2        |
| Kalutara         | 11         | 132              | 127                    | 96.2         | 47                      | 37.0        | 44                     | 34.7        |
| Kandy            | 22         | 264              | 257                    | 97.4         | 104                     | 40.5        | 63                     | 24.5        |
| Matale           | 12         | 144              | 143                    | 99.3         | 40                      | 28.0        | 73                     | 51.1        |
| Nuwara Eliya     | 7          | 84               | 83                     | 98.8         | 33                      | 39.8        | 36                     | 43.4        |
| Galle            | 17         | 204              | 196                    | 96.1         | 69                      | 35.2        | 137                    | 69.9        |
| Hambantota       | 11         | 132              | 123                    | 93.2         | 34                      | 27.6        | 34                     | 27.6        |
| Matara           | 16         | 192              | 190                    | 98.9         | 92                      | 48.4        | 96                     | 50.5        |
| Jaffna           | 7          | 84               | 80                     | 95.2         | 1                       | 1.3         | 77                     | 96.3        |
| Kilinochchi      | 3          | 36               | 31                     | 86.1         | 9                       | 29.0        | 25                     | 80.7        |
| Mannar           | 4          | 48               | 40                     | 83.3         | 10                      | 25.0        | 35                     | 87.5        |
| Vavuniya         | 4          | 48               | 46                     | 95.8         | 20                      | 43.5        | 38                     | 82.6        |
| Mullativu        | 5          | 60               | 53                     | 88.3         | 7                       | 13.2        | 50                     | 94.3        |
| Batticaloa       | 11         | 132              | 130                    | 98.5         | 42                      | 32.3        | 99                     | 76.2        |
| Ampara           | 7          | 84               | 81                     | 96.4         | 7                       | 8.6         | 54                     | 66.7        |
| Trincomalee      | 9          | 108              | 106                    | 98.2         | 55                      | 51.9        | 73                     | 68.9        |
| Kurunegala       | 18         | 216              | 214                    | 99.1         | 71                      | 33.2        | 79                     | 36.9        |
| Puttalam         | 9          | 108              | 104                    | 96.3         | 44                      | 42.3        | 9                      | 8.7         |
| Anuradhapura     | 19         | 228              | 224                    | 98.3         | 74                      | 33.0        | 123                    | 54.9        |
| Polonnaruwa      | 7          | 84               | 84                     | 100          | 36                      | 42.9        | 26                     | 30.9        |
| Badulla          | 15         | 180              | 179                    | 99.4         | 112                     | 62.6        | 73                     | 40.8        |
| Moneragala       | 10         | 120              | 119                    | 99.2         | 56                      | 47.1        | 45                     | 37.8        |
| Ratnapura        | 16         | 192              | 175                    | 91.2         | 51                      | 29.1        | 86                     | 49.1        |
| Kegalle          | 11         | 132              | 132                    | 100          | 71                      | 53.8        | 38                     | 28.8        |
| Kalmunai         | 13         | 156              | 155                    | 99.4         | 59                      | 38.1        | 124                    | 80.0        |
| <b>Sri Lanka</b> | <b>293</b> | <b>3516</b>      | <b>3417</b>            | <b>97.2</b>  | <b>1268</b>             | <b>37.1</b> | <b>1578</b>            | <b>46.2</b> |

Table 16.

**DISTRIBUTION OF NUMBER AND RATE OF ALL AEFI, ABSCESS AND SEVERE LOCAL REACTIONS BY RDHS DIVISIONS - 2007**

| RDHS Division | Total Immunizations Performed | All AEFI Reported |       | Abscess Formation |        |               | Severe Local Reactions |        |               |
|---------------|-------------------------------|-------------------|-------|-------------------|--------|---------------|------------------------|--------|---------------|
|               |                               | No.               | *Rate | No.               | **Rate | % to all AEFI | No.                    | **Rate | % to all AEFI |
| Colombo       | 630,495                       | 957               | 151.8 | 75                | 16.1   | 7.8           | 43                     | 9.2    | 4.5           |
| Gampaha       | 627,711                       | 731               | 116.5 | 63                | 13.7   | 8.6           | 95                     | 20.6   | 13.0          |
| Kalutara      | 371,525                       | 265               | 71.3  | 22                | 8.2    | 8.3           | 31                     | 11.5   | 11.7          |
| Kandy         | 443,450                       | 787               | 177.5 | 55                | 16.8   | 7.0           | 43                     | 13.2   | 5.5           |
| Matale        | 163,361                       | 156               | 95.5  | 29                | 24.0   | 18.6          | 35                     | 29.0   | 22.4          |
| Nuwara Eliya  | 244,443                       | 142               | 58.1  | 32                | 17.9   | 22.5          | 19                     | 10.7   | 13.4          |
| Galle         | 323,896                       | 115               | 35.5  | 15                | 6.3    | 13.0          | 25                     | 10.6   | 21.7          |
| Hambantota    | 196,350                       | 352               | 179.3 | 38                | 26.5   | 10.8          | 39                     | 27.2   | 11.1          |
| Matara        | 262,834                       | 191               | 72.7  | 65                | 34.1   | 34.0          | 35                     | 18.4   | 18.3          |
| Jaffna        | 158,231                       | 4                 | 2.5   | 1                 | 0.9    | 25.0          | 1                      | 0.9    | 25.0          |
| Kilinochchi   | 64,911                        | 13                | 20.1  | 2                 | 4.2    | 15.4          | 0                      | 0.0    | 0.0           |
| Mannar        | 31,901                        | 9                 | 28.2  | 3                 | 12.9   | 33.3          | 3                      | 12.9   | 33.3          |
| Vavuniya      | 54,151                        | 18                | 33.2  | 2                 | 4.9    | 11.1          | 8                      | 19.9   | 44.4          |
| Mullativu     | 58,907                        | 27                | 45.8  | 7                 | 15.9   | 25.9          | 0                      | 0.0    | 0.0           |
| Batticaloa    | 224,758                       | 64                | 28.5  | 16                | 9.6    | 25.0          | 4                      | 2.4    | 6.3           |
| Ampara        | 95,357                        | 75                | 78.6  | 13                | 18.8   | 17.3          | 3                      | 4.3    | 4.0           |
| Trincomalee   | 143,730                       | 66                | 45.9  | 32                | 30.5   | 48.5          | 7                      | 6.7    | 10.6          |
| Kurunegala    | 524,997                       | 360               | 68.6  | 61                | 15.9   | 16.9          | 46                     | 12.1   | 12.8          |
| Puttalam      | 286,998                       | 317               | 110.5 | 59                | 28.3   | 18.6          | 36                     | 17.3   | 11.4          |
| Anuradhapura  | 319,002                       | 217               | 68.1  | 48                | 20.5   | 22.1          | 45                     | 19.2   | 20.7          |
| Polonnaruwa   | 129,182                       | 207               | 160.2 | 54                | 57.2   | 26.1          | 42                     | 44.5   | 20.3          |
| Badulla       | 287,491                       | 465               | 161.7 | 59                | 27.9   | 12.7          | 14                     | 6.6    | 3.0           |
| Moneragala    | 158,056                       | 202               | 127.8 | 34                | 29.3   | 16.8          | 23                     | 19.9   | 11.4          |
| Ratnapura     | 332,774                       | 181               | 54.4  | 36                | 14.8   | 19.9          | 13                     | 5.4    | 7.2           |
| Kegalle       | 265,147                       | 252               | 95.1  | 30                | 15.5   | 11.9          | 28                     | 14.5   | 11.1          |
| Kalmunai      | 175,850                       | 42                | 23.9  | 22                | 16.9   | 52.4          | 4                      | 3.1    | 9.5           |
| Sri Lanka     | 6,575,508                     | 6215              | 94.5  | 873               | 18.1   | 14.0          | 642                    | 13.3   | 10.3          |

\* Per 100,000 all immunizations \*\* Per 100,000 immunizations less OPV

Table 17.

**DISTRIBUTION OF REPORTED AEFI BY TYPE OF ADVERSE EVENTS 2004 - 2007**

| Type of AEFI reported  | 2004 |      | 2005 |       | 2006 |      | 2007 |      |
|------------------------|------|------|------|-------|------|------|------|------|
|                        | No.  | Rate | No.  | Rate  | No.  | Rate | No.  | Rate |
| Injection site abscess | 620  | 11.3 | 565  | 8.4   | 677  | 13.3 | 873  | 18.1 |
| BCG Lymphadenitis*     | 62   | 18.1 | 77   | 22.4  | 11   | 3.1  | 22   | 5.9  |
| Severe Local Reaction  | 407  | 7.4  | 485  | 7.2   | 767  | 15.0 | 642  | 13.3 |
| High Fever             | 441  | 8.0  | 554  | 8.2   | 729  | 10.7 | 1437 | 21.9 |
| Allergic Reaction      | 728  | 13.2 | 869  | 12.8  | 969  | 14.3 | 992  | 15.1 |
| Nodule                 | 71   | 1.3  | 106  | 1.57  | 122  | 2.4  | **   | -    |
| Seizures               | 140  | 2.5  | 156  | 2.31  | 212  | 3.1  | 239  | 3.6  |
| Arthralgia             | 12   | 0.2  | 05   | 0.07  | 24   | 0.4  | 19   | 0.3  |
| Shock                  | 09   | 0.2  | 02   | 0.03  | 06   | 0.1  | 0    | -    |
| Excessive Screaming    | 73   | 1.3  | 52   | 0.77  | 59   | 0.9  | 112  | 1.7  |
| Encephalopathy         | 05   | 0.1  | 01   | 0.01  | 02   | 0.03 | 0    | -    |
| Meningitis             | 03   | 0.1  | 02   | 0.03  | 03   | 0.04 | 04   | 0.06 |
| GBS                    | 06   | 0.1  | 0    | 0.00  | 02   | 0.03 | 01   | 0.02 |
| Deaths                 |      | 0.0  | 04   | 0.06  | 04   | 0.06 | 05   | 0.08 |
| Others                 | 229  | 4.2  | 283  | 4.18  | 597  | 8.8  | 1871 | 28.5 |
| Total                  | 2836 | 51.6 | 3159 | 46.70 | 4184 | 61.6 | 6217 | 94.6 |

\* Rate per 100,000 BCG immunizations \*\* This year nodules has been included under "Others"

Therefore it should not be interpreted as those districts, reporting comparatively higher numbers and rates of AEFI with poor quality immunization

programmes and vice versa.

Table 17 illustrates the distribution of AEFI by type of adverse events from 2004 to 2007.

Table 18.

**AEFI REPORTED BY TYPE OF ANTIGEN 2004 - 2007 SRI LANKA**

| Vaccine                       | 2004          |       | 2005           |       | 2006             |       | 2007            |       |
|-------------------------------|---------------|-------|----------------|-------|------------------|-------|-----------------|-------|
|                               | No.           | Rate* | No.            | Rate* | No.              | Rate* | No.             | Rate* |
| BCG                           | 62            | 24.5  | 113            | 32.8  | 37               | 10.5  | 61              | 16.6  |
| DPT<br>(% against total AEFI) | 1736<br>(61%) | 164.5 | 1743<br>(55 %) | 126.4 | 2803<br>(67.9 %) | 205.7 | 5092<br>(81.9%) | 364.3 |
| DT                            | 75            | 21.6  | 101            | 31.1  | 129              | 39.2  | 184             | 51.1  |
| OPV                           | 18            | 5.8   | 3              | 0.2   | 19               | 1.1   | 28              | 1.6   |
| Measles                       | 61            | 18.6  | 67             | 18.9  | 106              | 30.0  | 228             | 62.6  |
| TT                            | 23            | 7.8   | 44             | 13.3  | 54               | 15.9  | 79              | 22.8  |
| JE                            | 414           | 57.6  | 898            | 192.6 | 817              | 92.5  | 41              | 90.5  |
| Rubella                       | 56            | 16.0  | 42             | 17.2  | 46               | 20.8  | 152             | 49.9  |
| aTd                           | 16            | 5.8   | 33             | 12.6  | 51               | 19.1  | 66              | 25.5  |
| MR                            | 347           | 105.8 | 84             | 25.4  | 69               | 20.7  | 169             | 49.6  |
| Hep B                         | 30            | 11.6  | 32             | 3.3   | 44               | 4.4   | 61              | 5.9   |
| Other                         | 4             |       | 3              |       | 6                |       | 54              |       |
| Total                         | 2842          | 51.6  | 3163           | 46.7  | 4184             | 61.5  | 6215            | 94.5  |

\* Rate per 100,000 antigens

Table 19.

**DISTRIBUTION OF SELECTED ADVERSE EVENTS BY TYPE OF VACCINE – 2007**

| Vaccine | Seizure | Allergic Reactions | Abscess | Severe local reaction | High fever | Lymphadenitis | Encephalitis | Paralysis | Encephalopathy | Meningitis | Shock | Arthralgia | Persistent Screaming | Death | Total |
|---------|---------|--------------------|---------|-----------------------|------------|---------------|--------------|-----------|----------------|------------|-------|------------|----------------------|-------|-------|
| BCG     | 1       | 2                  | 16      | 4                     | 4          | 21            | 0            | 0         | 0              | 0          | 0     | 0          | 0                    | 0     | 48    |
| DPT     | 214     | 542                | 808     | 544                   | 1290       | 0             | 1            | 0         | 0              | 4          | 0     | 19         | 103                  | 2     | 3527  |
| OPV     | 5       | 3                  | 0       | 0                     | 13         | 0             | 0            | 0         | 0              | 0          | 0     | 0          | 3                    | 0     | 24    |
| Measles | 5       | 84                 | 4       | 11                    | 66         | 0             | 0            | 0         | 0              | 0          | 0     | 0          | 1                    | 0     | 171   |
| DT      | 4       | 45                 | 13      | 35                    | 22         | 0             | 0            | 0         | 0              | 0          | 0     | 0          | 2                    | 0     | 121   |
| TT      | 0       | 27                 | 5       | 12                    | 3          | 0             | 0            | 0         | 0              | 0          | 0     | 0          | 0                    | 0     | 47    |
| Rubella | 0       | 124                | 0       | 3                     | 6          | 0             | 0            | 0         | 0              | 0          | 0     | 0          | 0                    | 0     | 133   |
| JE      | 2       | 21                 | 0       | 5                     | 7          | 0             | 1            | 0         | 0              | 0          | 0     | 0          | 0                    | 0     | 36    |
| aTd     | 0       | 13                 | 1       | 1                     | 5          | 0             | 0            | 0         | 0              | 0          | 0     | 0          | 0                    | 0     | 20    |
| MR      | 6       | 115                | 1       | 15                    | 13         | 1             | 0            | 0         | 0              | 0          | 0     | 0          | 2                    | 0     | 153   |
| Hep     | 2       | 12                 | 13      | 2                     | 5          | 0             | 0            | 0         | 0              | 0          | 0     | 0          | 1                    | 0     | 35    |
| Others  | 0       | 4                  | 12      | 10                    | 3          | 0             | 0            | 0         | 0              | 0          | 0     | 0          | 0                    | 3     | 32    |
| Total   | 239     | 992                | 873     | 642                   | 1437       | 22            | 2            | 0         | 0              | 4          | 0     | 19         | 112                  | 5     | 4347  |

Table 20.

**DISTRIBUTION AND RATE OF ABSCESS FORMATION BY TYPE OF VACCINE 1999 - 2007**

| Vaccine | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---------|------|------|------|------|------|------|------|------|------|
| BCG     | 0.0  | 5.8  | 3.9  | 3.4  | 1.2  | 8.2  | 6.7  | 3.1  | 4.3  |
| DPT     | 35.7 | 41.9 | 58.8 | 44.5 | 40.2 | 39.9 | 36.0 | 44.8 | 57.8 |
| Measles | 0.8  | 8.0  | 7.9  | 4.2  | 1.7  | 1.4  | 0.6  | 2.8  | 1.1  |
| DT      | 0.0  | 4.6  | 2.2  | 4.3  | 2.8  | 4.9  | 5.2  | 6.7  | 3.6  |
| TT      | 1.7  | 1.9  | 1.8  | 0.6  | 0.63 | 0.8  | 0.9  | 0.6  | 1.0  |
| Rubella | 0.2  | 1.5  | 6.0  | 00   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| JE      | 0.0  | 0.0  | 1.0  | 0.0  | 0.1  | 1.4  | 2.1  | 0.7  | 0.0  |
| aTd     | 0.0  | 0.0  | 2.8  | 0.0  | 0.9  | 0.4  | 0.4  | 0.4  | 0.4  |
| MR      | 0.0  | 0.0  | 1.9  | 0.7  | 0.3  | 0.3  | 0.3  | 0.3  | 0.3  |
| Total   | 12.3 | 16.2 | 15.8 | 10.2 | 9.0  | 11.3 | 13.7 | 14.9 | 22.4 |

\* Rate per 100,000 antigens

Table 21

**DISTRIBUTION OF TOTAL ABSCESS FORMATION AND ABSCESS FOLLOWING DPT VACCINE BY RDHS DIVISION 2004 - 2007**

| RDHS Division | 2004           |      |               |       | 2005           |      |               |      | 2006           |      |               |      | 2007           |      |               |       |
|---------------|----------------|------|---------------|-------|----------------|------|---------------|------|----------------|------|---------------|------|----------------|------|---------------|-------|
|               | *Total Abscess |      | **DPT Abscess |       | *Total Abscess |      | **DPT Abscess |      | *Total Abscess |      | **DPT Abscess |      | *Total Abscess |      | **DPT Abscess |       |
|               | No             | Rate | No            | Rate  | No             | Rate | No            | Rate | No             | Rate | No            | Rate | No             | Rate | No            | Rate  |
| Colombo       | 44             | 8.1  | 33            | 23.1  | 38             | 8.2  | 32            | 22.7 | 58             | 10.7 | 54            | 40.7 | 75             | 16.1 | 71            | 56.7  |
| Gampaha       | 51             | 7.9  | 45            | 32.7  | 46             | 10.2 | 35            | 26.0 | 52             | 8.5  | 48            | 36.2 | 63             | 13.7 | 58            | 43.2  |
| Kalutara      | 46             | 16.9 | 39            | 49.9  | 42             | 9.3  | 39            | 50.6 | 22             | 4.1  | 15            | 19.5 | 22             | 8.4  | 20            | 24.9  |
| Kandy         | 57             | 17.2 | 46            | 47.9  | 41             | 12.5 | 37            | 39.2 | 82             | 28.2 | 74            | 78.9 | 55             | 16.8 | 48            | 51.6  |
| Matale        | 24             | 20.0 | 23            | 65.9  | 17             | 14.9 | 16            | 47.6 | 22             | 11.9 | 21            | 62.9 | 29             | 24.0 | 26            | 74.2  |
| Nuwara Eliya  | 29             | 14.9 | 29            | 53.0  | 20             | 11.3 | 19            | 35.6 | 25             | 16.2 | 22            | 43.1 | 32             | 17.9 | 32            | 59.3  |
| Galle         | 20             | 8.6  | 15            | 22.9  | 6              | 2.61 | 6             | 8.7  | 5              | 2.2  | 5             | 7.0  | 15             | 6.3  | 15            | 21.7  |
| Hambantota    | 70             | 47.7 | 58            | 142.9 | 38             | 27.6 | 37            | 88.7 | 25             | 17.8 | 21            | 50.2 | 38             | 26.5 | 32            | 74.6  |
| Matara        | 7              | 3.8  | 6             | 11.5  | 41             | 22.3 | 38            | 71.3 | 41             | 24.2 | 36            | 67.9 | 65             | 34.1 | 55            | 102.5 |
| Jaffna        | 3              | 2.2  | 3             | 8.2   | 2              | 1.6  | 2             | 5.3  | 3              | 2.3  | 3             | 8.7  | 1              | 0.9  | 1             | 3.1   |
| Kilinochchi   | 2              | 5.8  | 2             | 18.5  | 2              | 4.9  | 1             | 8.5  | 4              | 10.1 | 4             | 31.2 | 2              | 4.2  | 2             | 14.3  |
| Mannar        | 0              | 0.0  | 0             | -     | 4              | 18.9 | 3             | 44.4 | 2              | 7.8  | 2             | 19.9 | 3              | 12.9 | 3             | 42.8  |
| Vavuniya      | 0              | 0.0  | 0             | -     | 2              | 4.8  | 0             | 0.0  | 5              | 7.9  | 1             | 10.5 | 2              | 4.9  | 2             | 17.7  |
| Mullativu     | 0              | 0.0  | 0             | -     | 0              | 0.0  | 0             | 0.0  | 1              | 9.7  | 0             | 0.0  | 7              | 15.9 | 6             | 46.5  |
| Batticaloa    | 28             | 19.4 | 21            | 49.4  | 12             | 8.6  | 11            | 23.1 | 9              | 6.2  | 7             | 15.4 | 16             | 9.9  | 15            | 31.5  |
| Ampara        | 2              | 2.9  | 2             | 10.0  | 3              | 4.8  | 1             | 4.9  | 5              | 6.9  | 5             | 25.2 | 13             | 18.8 | 12            | 54.9  |
| Trincomalee   | 14             | 13.8 | 12            | 41.1  | 4              | 3.8  | 3             | 9.3  | 9              | 8.5  | 8             | 25.6 | 32             | 30.5 | 29            | 91.4  |
| Kurunegala    | 27             | 7.2  | 24            | 22.5  | 36             | 9.9  | 36            | 33.7 | 72             | 21.2 | 69            | 66.0 | 61             | 15.9 | 58            | 51.3  |
| Puttalam      | 11             | 5.4  | 9             | 15.5  | 13             | 6.8  | 11            | 19.3 | 21             | 10.9 | 19            | 33.6 | 59             | 28.3 | 55            | 92.4  |
| Anuradhapura  | 20             | 9.4  | 36            | 57.7  | 41             | 19.3 | 38            | 60.9 | 42             | 20.1 | 38            | 60.8 | 48             | 20.5 | 47            | 71.3  |
| Polonnaruwa   | 15             | 16.4 | 15            | 58.2  | 25             | 27.9 | 24            | 87.5 | 22             | 21.8 | 22            | 78.8 | 54             | 57.2 | 54            | 188.4 |
| Badulla       | 19             | 8.9  | 19            | 32.3  | 14             | 6.9  | 14            | 23.2 | 38             | 20.0 | 32            | 52.9 | 59             | 27.9 | 55            | 88.7  |
| Moneragala    | 4              | 3.6  | 4             | 12.8  | 28             | 27.2 | 27            | 83.7 | 25             | 24.7 | 22            | 67.8 | 34             | 29.3 | 28            | 81.1  |
| Ratnapura     | 84             | 34.7 | 81            | 112.6 | 51             | 21.6 | 37            | 51.2 | 56             | 20.9 | 53            | 73.4 | 36             | 14.8 | 35            | 47.9  |
| Kegalle       | 24             | 11.9 | 21            | 37.5  | 34             | 18.0 | 23            | 40.7 | 13             | 7.9  | 13            | 24.3 | 30             | 15.5 | 27            | 46.9  |
| Kalmunai      | 0              | 0.0  | -             | -     | 5              | 5.3  | 4             | 13.4 | 18             | 15.3 | 16            | 41.2 | 22             | 16.9 | 22            | 59.4  |
| Sri Lanka     | 620            | 12.9 | 543           | 39.9  | 565            | 11.8 | 496           | 35.9 | 677            | 13.3 | 610           | 44.8 | 873            | 18.1 | 808           | 57.8  |

\* Rate per 100,000 total antigens \*\* Rate per 100,000 DPT immunizations

Compared to the previous years there is a marked increase in the number of AEFI reported in 2007. This increased reporting may be mainly attributed to the introduction of standard printed formats to the reporting system such as Immunization Clinic AEFI Register, MOH Office AEFI Register and Carbonized AEFI Reporting forms in 2006 and 2007. Further, a series of district level meetings conducted in previous years targeting all public and curative health personnel also may have contributed to the improved reporting. Data from table 18 also support this hypothesis because this increased reporting in both number and rate of AEFI has not been confined to a few specific antigens but can be seen across all antigens. Increase in reporting of AEFI under the category of "high fever" and minor AEFI reporting under category 'others' has contributed mostly to this increase. Altogether five deaths following immunization have been reported during the year under review. Detailed information and results of investigations on these deaths will be presented in a separate report.

The distribution of reported AEFI by type of vaccine from 2004 to 2007 is presented in Table 18 and cross tabulation of vaccines by selected common AEFI is presented in Table 19. As expected the highest rate of AEFI was reported against DPT vaccine followed by JE vaccine. From 2004 to 2006 nearly 60 % of the total AEFI reported were against the DPT vaccine. However in 2007 this proportion has increased to over 80 %. Comparatively there were increases in all types of AEFI against DPT vaccine. However, a marked increase is observed against abscesses and high fever. To determine whether this increase is due to improved reporting or due to increased vaccine reactions need further analysis. Reported numbers and rates of AEFI against other vaccines can be considered as within expected limits.

According to the data in Table 20, throughout the years, comparatively very high rates of abscess formation has been reported against the DPT vaccine. In 2007, it records the highest rate of abscess formation (57.8 abscesses per 100,000 DPT immunizations) after 2001. Annual AEFI Surveillance Report for 2000 published in Weekly Epidemiological Report Vol 29, No 35, 2001 has highlighted this issue and identified that rates of abscess formation against DPT vaccine is far exceeding the rate of abscess formation against other vaccines.

In this article it was further emphasized that it is unlikely that all these abscess due to inadequate sterility and concluded that majority of such abscess formation following DPT vaccination might be sterile abscesses. At that time it has further hypothesized that even though it is acceptable to have a higher rate of local reactions and abscess formation following DPT vaccine owing to its high reactivity of the Pertussis component, however due to persistent high rates of abscess formation and severe local reactions over the years other programme errors in ad-

ministration and storage of DPT vaccine may have been incriminated.

As reasons for sterile abscess formation after DPT vaccination, the following three possible reasons were identified and all supervising officers and vaccinators were advised to avoid such program errors and requested to take appropriate action to minimize the occurrence of sterile abscesses and severe local reactions.

- a. Subcutaneous administration of DPT vaccine instead of intramuscular administration.
- b. Freezing of DPT vaccine
- c. Vial is not shaken before vaccination

Accordingly, as shown in Table 20, reported abscess rate has gradually reduced from all time high 58.8 per 100,000 DPT immunizations in 2001 to 36.0 per 100,000 DPT immunizations in 2005. However, in 2006 and 2007 this rate has again increased to 57.8.

Distribution of total abscess formation and abscess following DPT vaccine by RDHS divisions from 2004 to 2007 is presented in Table 21. Increase in both number and rate of abscess formation is observed in almost all districts. Significant increase of abscess formation when compared to 2005 is seen in the RDHS areas of Colombo, Gampaha, Matara, Trincomalee, Kurunagala, Puttlam, Polonnaruwa, Badulla and Kalmunai. It is therefore, the duty all programme managers in these districts to look into determine whether this increase is due to improved reporting or due to deterioration of service quality and take appropriate action if it is very important.

#### Key Observations:

- a. Surveillance of AEFI as an integral part of the immunization programme has strengthened over the years.
- b. Completeness of reporting has improved immensely. However, presence of considerable number of "Nil" returns from some MOH areas are causing some concern.
- c. Local reactions including abscess formation following DPT vaccination still is an important issue needing further interventions to improve quality aspects of the immunization programme.
- d. Apart from the above issues, rates of reporting of AEFI for other antigens are within the expected limits.

#### Recommendations:

- a. All severe local AEFI, especially abscess formation should be investigated thoroughly and appropriate action taken at MOH level to minimize occurrence of such events.
- b. MOH areas and districts still reporting high rates of 'Nil' monthly reports should strengthen at least retrospective detection and reporting of AEFI at immunization clinic level.

## 20. CDD SURVEILLANCE REPORT – 2006

### Notification of Dysentery

Total number of 7976 cases of dysentery was notified to the Epidemiology Unit in the year 2006, at a notification rate of 40.6 notifications per 100,000 population. This is in comparison to 7987 cases notified in the previous year.

The highest number of notifications was received from the districts of Badulla (789) and Ratnapura (778). However the highest notification rate was from Vavuniya and Badulla districts, which had a notification rate of 106.2 and 96.0 per 100,000 population respectively.

Highest number of notifications were received during the months of November (977 cases) and December (1004 cases) in the year 2006.

Table 22.

**THE DISTRIBUTION OF DYSENTERY BY RDHS DIVISIONS IN 2006**

| District     | Dysentery   |             |
|--------------|-------------|-------------|
|              | Number      | Rate        |
| Colombo      | 356         | 15.0        |
| Gampaha      | 332         | 15.6        |
| Kalutara     | 508         | 46.3        |
| Kandy        | 452         | 33.7        |
| Matale       | 347         | 74.8        |
| Nuwara eliya | 353         | 48.4        |
| Galle        | 201         | 19.6        |
| Hambantota   | 102         | 18.9        |
| Matara       | 199         | 24.9        |
| Jaffna       | 158         | 26.4        |
| Killinochchi | 23          | 16.0        |
| Mannar       | 58          | 59.2        |
| Vavuniya     | 153         | 106.3       |
| Mullaituvu   | 24          | 16.8        |
| Batticaloa   | 250         | 45.7        |
| Ampara       | 265         | 87.5        |
| Trincomalee  | 220         | 57.0        |
| Kurunagala   | 554         | 36.9        |
| Puttalam     | 331         | 45.0        |
| Anuradhapura | 447         | 57.2        |
| Polonnaruwa  | 159         | 42.3        |
| Badulla      | 789         | 96.0        |
| Moneragala   | 367         | 88.4        |
| Ratnapura    | 778         | 73.3        |
| Kegalle      | 281         | 35.1        |
| Kalmunai     | 269         | 87.5        |
| <b>Total</b> | <b>7976</b> | <b>40.6</b> |

\*Rate per 100,000 population

\*Ampara and Kalmunai RDHS division rate: taken for Ampara district

Source: Epidemiological Unit

### Enteric Fever notification

Total number of 1989 cases of Enteric fever was notified to the Epidemiology Unit in the year 2006. This is in comparison to 2376 cases notified in the previous year.

A total of 1989 enteric fever cases were notified in 2006 from the entire country at a notification rate of 10.1 notifications per 100,000 population. Highest number of notifications was received from the districts of Jaffna (223) and Mannar (141)

Mannar district had the highest notification rate with 143.88 notifications per 100,000 population.

### Cholera surveillance report – 2006

No confirmed cases of cholera were reported to the Epidemiology Unit since the last confirmed case reported in 2003.

Figure 1.

**NOTIFICATION OF DYSENTERY BY MONTH FOR 2006**

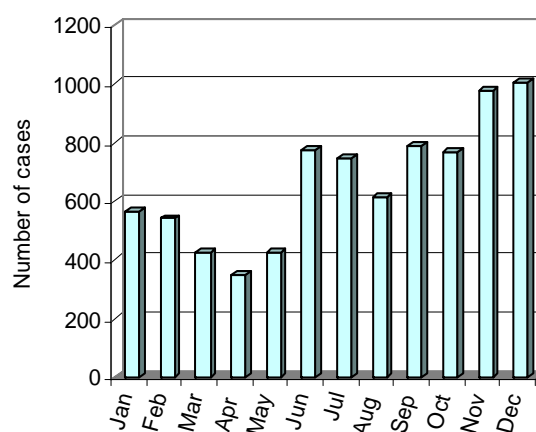


Figure 2.

**NOTIFICATION OF DYSENTERY BY RDHS DIVISION IN 2006**

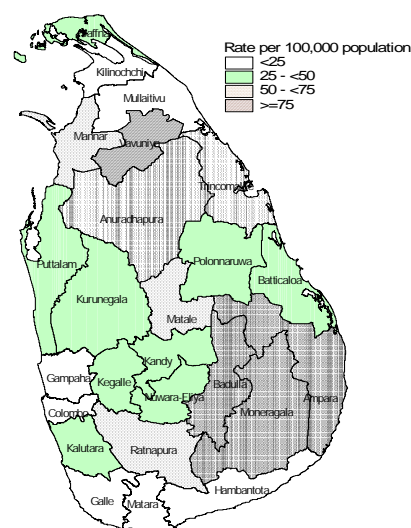




Table 23.

**THE DISTRIBUTION OF ENTERIC FEVER BY RDHS DIVISIONS IN 2006**

| District     | Enteric Fever |       |
|--------------|---------------|-------|
|              | Number        | Rate  |
| Colombo      | 82            | 3.5   |
| Gampaha      | 59            | 2.8   |
| Kalutara     | 86            | 7.8   |
| Kandy        | 115           | 8.6   |
| Matale       | 19            | 4.1   |
| Nuwara eliya | 195           | 26.7  |
| Galle        | 14            | 1.4   |
| Hambantota   | 35            | 6.5   |
| Matara       | 81            | 10.2  |
| Jaffna       | 223           | 37.2  |
| Killinochchi | 7             | 4.9   |
| Mannar       | 141           | 143.9 |
| Vavuniya     | 96            | 66.7  |
| Mullaitivu   | 36            | 25.2  |
| Batticaloa   | 40            | 7.3   |
| Ampara       | 12            | 14.4  |
| Trincomalee  | 45            | 11.7  |
| Kurunegala   | 87            | 5.8   |
| Puttalam     | 121           | 16.4  |
| Anuradhapura | 44            | 5.6   |
| Polonnaruwa  | 10            | 2.7   |
| Badulla      | 119           | 14.5  |
| Moneragala   | 76            | 18.3  |
| Ratnapura    | 111           | 10.5  |
| Kegalle      | 59            | 7.4   |
| Kalmunai     | 76            | 14.4  |
| Total        | 1989          | 10.1  |

\*Rate per 100,000 population

\*Ampara and Kalmunai RDHS division rate: taken for Ampara district

Source: Epidemiological Unit

Figure 3.

**NOTIFICATION OF ENTERIC FEVER CASES BY MONTH FOR 2006**

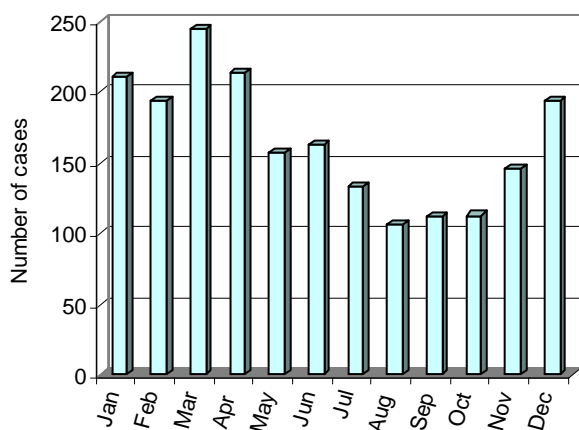
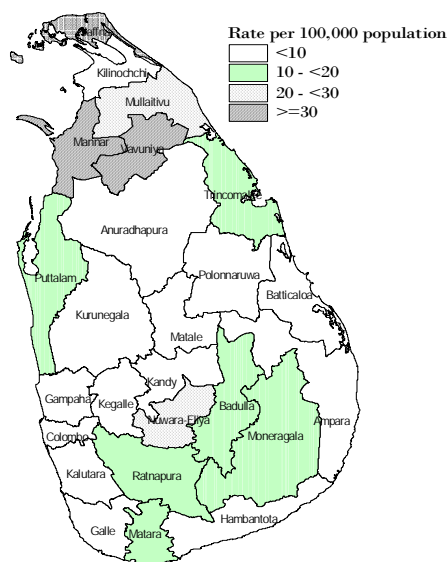


Figure 4.

**NOTIFICATION OF ENTERIC FEVER BY RDHS DIVISION IN 2006**



## 21. JAPANESE ENCEPHALITIS SURVEILLANCE REPORT 2006

Japanese Encephalitis (JE) is an acute infection in the central nervous system caused by an arthropod-borne virus. It is the most common documented cause of viral encephalitis in Asia. Japanese Encephalitis virus was first isolated in Ceylon in 1968. The isolation was done at the Medical Research Institute, Colombo. Since then JE cases have been identified from various parts of the country.

The first recorded major outbreak of Japanese encephalitis (JE) in Sri Lanka occurred in 1985-86 with 385 cases and 64 deaths in Anuradhapura and Puttalam districts. Outbreaks occurred in 1986-87 and 1987-88, the latter being the largest with 812 cases and 192 deaths in two adjoining districts (Kurunegala and Polonnaruwa). Cases occurred in rice cultivating areas with a network of irrigation canals supported by seasonal, moderate to heavy rainfall. Children aged 5-9 and young adults aged 20-24 years were predominantly affected.

JE was also spreading to new areas with previously low transmission. To cope with this emerging challenge, Epidemiology Unit of the Ministry of Health initiated phased JE immunization in 1988. Children aged 1-10 years were offered three primary doses and a booster of inactivated vaccine in the inter-pandemic period through a campaign approach. Over the years, JE incidence decreased as immunisation coverage increased. However, cases and occasional outbreaks were reported in other districts where immunization was not carried out (Table 24),

Table 24.

### CASES, DEATHS AND CASE FATALITY RATE (CFR) OF JAPANESE ENCEPHALITIS 1990 – 2006

| Year | Japanese Encephalitis |      |        |      |
|------|-----------------------|------|--------|------|
|      | Cases                 |      | Deaths | CFR  |
|      | No.                   | Rate |        |      |
| 1990 | 387                   | 2.3  | 43     | 11.1 |
| 1991 | 325                   | 1.9  | 25     | 7.7  |
| 1992 | 291                   | 1.7  | 27     | 9.3  |
| 1993 | 289                   | 1.6  | 52     | 18.0 |
| 1994 | 230                   | 1.3  | 41     | 17.6 |
| 1995 | 173                   | 1.0  | 32     | 18.5 |
| 1996 | 307                   | 1.7  | 44     | 14.4 |
| 1997 | 164                   | 0.9  | 19     | 11.9 |
| 1998 | 122                   | 0.7  | 3      | 2.5  |
| 1999 | 102                   | 0.5  | 3      | 2.9  |
| 2000 | 83                    | 0.5  | 2      | 2.4  |
| 2001 | 66                    | 0.4  | 9      | 13.6 |
| 2002 | 113                   | 0.6  | 15     | 13.2 |
| 2003 | 133                   | 0.7  | 20     | 15.0 |
| 2004 | 129                   | 0.66 | 9      | 6.9  |
| 2005 | 65                    | 0.33 | 6      | 9.2  |
| 2006 | 84                    | 0.42 | 6      | 6.6  |

Source : Epidemiological unit

\* Based on Special surveillance

\* Incidence rate per 100,000 population

\* Case Fatality Rate (CFR) percentage

and the programme ultimately expanded to 18 districts.

In year 2006, there were 84 suspected cases of JE with 6 deaths. The case fatality rate was 6.6%. Out of 84 suspected cases 26 were serologically confirmed. The districts of Colombo (12 i.e 46%), Ratnapura(3 i.e. 11%) and Anuradhapura (5 i.e.19%)reported the highest number of cases (Table 25).

Table 25

### DISTRIBUTION OF SUSPECTED JE CASES AND DEATHS BY DISTRICTS- 2006

| District     | Suspected cases | Confirmed cases | Deaths   |
|--------------|-----------------|-----------------|----------|
| Colombo      | 17              | 12              | 0        |
| Gampaha      | 6               | 1               | 1        |
| Kalutara     | 3               | 3               | 0        |
| Kandy        | 8               | 0               | 0        |
| Matale       | 2               | 0               | 0        |
| Galle        | 3               | 0               | 0        |
| Hambantota   | 3               | 0               | 0        |
| Matara       | 6               | 0               | 0        |
| Jaffna       | 2               | 1               | 0        |
| Vavuniya     | 2               | 0               | 0        |
| Kurunegala   | 4               | 1               | 0        |
| Trincomalee  | 1               | 0               | 1        |
| Anuradhapura | 10              | 5               | 3        |
| Polonnaruwa  | 2               | 0               | 0        |
| Monaragala   | 1               | 0               | 0        |
| Ratnapura    | 11              | 3               | 1        |
| Badulla      | 2               | 0               | 0        |
| Mullaitivu   | 1               | 0               | 0        |
| <b>Total</b> | <b>84</b>       | <b>26</b>       | <b>6</b> |

Confirmed cases of JE occurred throughout the year but fifty percent of the case load (13) occurred in December (Table 26). Almost all age groups were affected by the disease. However 42% of the confirmed cases (11) were over 45 years of age followed by 4 cases (15%) in the less than 10 year age group (Table 27). There were 15 males(57%) and 11 females (42%) among the confirmed cases and out of 6 deaths 2 were males and 4 were females.

Table 26.

**DISTRIBUTION OF SUSPECTED JE CASES AND DEATHS BY MONTHS**

| Month        | Sus-pected cases | Con-firmed cases | Deaths   |
|--------------|------------------|------------------|----------|
| January      | 7                | 3                | 1        |
| February     | 2                | 0                | 0        |
| March        | 7                | 0                | 1        |
| April        | 5                | 2                | 0        |
| May          | 2                | 2                | 0        |
| June         | 4                | 1                | 0        |
| July         | 2                | 0                | 0        |
| August       | 3                | 1                | 1        |
| September    | 3                | 1                | 0        |
| October      | 9                | 2                | 2        |
| November     | 4                | 1                | 0        |
| December     | 36               | 13               | 1        |
| <b>Total</b> | <b>84</b>        | <b>26</b>        | <b>6</b> |

Table 28.

**JE IMMUNIZATION COVERAGE IN 1-3 YEARS OLD CHILDREN 2006**

| District         | Immunization Coverage % |             |             |
|------------------|-------------------------|-------------|-------------|
|                  | 1st dose                | 2nd dose    | 3rd dose    |
| Anuradhapura     | 122.0                   | 110.7       | 72.0        |
| Polonnaruwa      | 136.2                   | 128.5       | 96.3        |
| Kurunegala       | 51.0                    | 49.7        | 76.0        |
| Puttalam         | 125.4                   | 115.3       | 66.7        |
| Colombo          | 107.3                   | 102.0       | 75.7        |
| Gampaha          | 83.5                    | 78.1        | 85.7        |
| Kalutara         | 147.4                   | 143.4       | 101.0       |
| Galle            | 76.1                    | 72.5        | 78.4        |
| Matara           | 123.6                   | 115.9       | 87.2        |
| Hambantota       | 73.2                    | 73.0        | 72.3        |
| Ampara           | 129.4                   | 81.3        | 70.5        |
| Kalmunai         | 60.2                    | 40.5        | 45.3        |
| Trincomalee      | 112.6                   | 94.8        | 43.3        |
| Batticaloa       | 88.8                    | 84.1        | 56.4        |
| Jaffna           | 93.9                    | 118.6       | 35.6        |
| Ratnapura        | 97.8                    | 93.8        | 61.1        |
| Matale           | 60.7                    | 68.0        | 34.8        |
| Vavuniya         | 68.3                    | 59.2        | 4.9         |
| <b>Sri Lanka</b> | <b>96.9</b>             | <b>91.5</b> | <b>71.9</b> |

\*For calculation of coverage number of DPT 1<sup>st</sup> doses given in each district in 2005 was taken as the denominator.

**JE Immunization Programme**

Immunization programme was carried out in 18 districts (Table 28). Since the immunization programme was conducted during the last few months of 2006, more than one birth cohort was immunized leading to over 100% coverage in certain districts. The coverage for the 3rd dose is low (71.9%) when compared to the first two doses. This trend had prevailed in the past as well and needs to be rectified.

Table 27.

**DISTRIBUTION OF SUSPECTED JE CASES AND DEATHS BY AGE GROUPS**

| Age group    | Sus-pected cases | Con-firmed cases | Deaths   |
|--------------|------------------|------------------|----------|
| <1           | 2                | 1                | 0        |
| 1-4          | 11               | 3                | 1        |
| 5-9          | 12               | 0                | 1        |
| 10-14        | 8                | 3                | 0        |
| 15-19        | 7                | 1                | 1        |
| 20-24        | 8                | 1                | 0        |
| 25-29        | 2                | 1                | 0        |
| 30-34        | 4                | 1                | 1        |
| 35-39        | 5                | 1                | 0        |
| 40-44        | 4                | 0                | 0        |
| 45-49        | 4                | 3                | 0        |
| 50-54        | 4                | 3                | 1        |
| 55-59        | 2                | 1                | 0        |
| >60          | 8                | 4                | 1        |
| Unknown      | 3                | 3                | 0        |
| <b>Total</b> | <b>84</b>        | <b>26</b>        | <b>6</b> |

Table 29

**22. SUMMARY OF NOTIFIABLE DISEASES – 4<sup>TH</sup> QUARTER 2007**

| 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                             | 55          | 699                       | 2            | 65            | 34             | 1            | 55            | 0         | 12                  | 1         | 2            | 39              |
| Gampaha       | 0        | 2                             | 46          | 495                       | 8            | 28            | 19             | 2            | 142           | 0         | 2                   | 1         | 5            | 47              |
| Kalutara      | 0        | 0                             | 104         | 142                       | 1            | 25            | 8              | 1            | 117           | 2         | 5                   | 1         | 2            | 11              |
| Kandy         | 0        | 1                             | 82          | 100                       | 3            | 14            | 7              | 1            | 85            | 3         | 0                   | 1         | 24           | 130             |
| Matale        | 0        | 0                             | 80          | 40                        | 0            | 18            | 1              | 1            | 131           | 1         | 2                   | 0         | 0            | 21              |
| Nuwara Eliya  | 0        | 4                             | 28          | 7                         | 0            | 21            | 1              | 0            | 6             | 1         | 0                   | 0         | 8            | 72              |
| Galle         | 0        | 1                             | 34          | 27                        | 3            | 8             | 5              | 0            | 114           | 3         | 0                   | 0         | 1            | 6               |
| Hambantota    | 0        | 1                             | 57          | 42                        | 0            | 3             | 3              | 0            | 20            | 1         | 2                   | 0         | 27           | 10              |
| Matara        | 0        | 2                             | 45          | 100                       | 2            | 21            | 1              | 1            | 129           | 0         | 3                   | 1         | 36           | 7               |
| Jaffna        | 0        | 2                             | 33          | 198                       | 0            | 86            | 9              | 0            | 0             | 0         | 6                   | 0         | 67           | 12              |
| Kilinochchi   | 0        | 0                             | 1           | 0                         | 0            | 2             | 0              | 0            | 0             | 0         | 0                   | 0         | 0            | 0               |
| Mannar        | 0        | 0                             | 21          | 0                         | 0            | 48            | 0              | 0            | 0             | 0         | 0                   | 0         | 0            | 9               |
| Vavuniya      | 0        | 1                             | 44          | 24                        | 0            | 7             | 12             | 0            | 1             | 1         | 1                   | 0         | 0            | 6               |
| Mullativu     | 0        | 0                             | 14          | 0                         | 0            | 1             | 1              | 0            | 0             | 0         | 2                   | 0         | 0            | 4               |
| Batticaloa    | 0        | 0                             | 25          | 6                         | 3            | 5             | 0              | 3            | 0             | 0         | 2                   | 0         | 0            | 133             |
| Ampara        | 0        | 0                             | 111         | 2                         | 0            | 3             | 2              | 0            | 5             | 1         | 2                   | 0         | 2            | 11              |
| Trincomalee   | 0        | 0                             | 124         | 12                        | 0            | 7             | 2              | 0            | 2             | 0         | 0                   | 2         | 9            | 18              |
| Kurunegala    | 0        | 1                             | 164         | 292                       | 3            | 17            | 9              | 4            | 55            | 1         | 5                   | 0         | 11           | 43              |
| Puttalam      | 0        | 0                             | 106         | 265                       | 6            | 37            | 5              | 0            | 8             | 1         | 10                  | 0         | 3            | 12              |
| Anuradhapura  | 0        | 0                             | 108         | 127                       | 2            | 2             | 1              | 1            | 20            | 0         | 0                   | 1         | 2            | 10              |
| Polonnaruwa   | 0        | 1                             | 91          | 14                        | 0            | 3             | 60             | 0            | 2             | 3         | 0                   | 0         | 0            | 13              |
| Badulla       | 0        | 3                             | 178         | 33                        | 2            | 23            | 3              | 0            | 4             | 0         | 0                   | 0         | 31           | 107             |
| Moneragala    | 0        | 0                             | 85          | 23                        | 0            | 14            | 13             | 0            | 15            | 0         | 1                   | 0         | 27           | 8               |
| Ratnapura     | 0        | 2                             | 117         | 123                       | 3            | 22            | 5              | 0            | 30            | 0         | 12                  | 3         | 8            | 17              |
| Kegalle       | 0        | 2                             | 79          | 197                       | 3            | 24            | 6              | 0            | 157           | 0         | 2                   | 1         | 16           | 93              |
| Kalmunai      | 0        | 0                             | 73          | 6                         | 3            | 2             | 7              | 0            | 1             | 0         | 1                   | 0         | 0            | 29              |
| <b>TOTAL</b>  | <b>0</b> | <b>23</b>                     | <b>1905</b> | <b>2974</b>               | <b>44</b>    | <b>506</b>    | <b>214</b>     | <b>15</b>    | <b>1099</b>   | <b>18</b> | <b>70</b>           | <b>12</b> | <b>281</b>   | <b>868</b>      |

No polio cases. (from AFP surveillance system).

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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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