

AFP Surveillance – 2007

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

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

Epidemiological Unit is the central co-ordinating agency for the National AFP Surveillance programme under the Poliomyelitis Eradication Initiative, receiving information about AFP cases from Medical officers in curative institutions where the patients seek treatment and also from Medical Officers of Health (MOOH).

In addition to the routine surveillance, active surveillance is carried out in the premier Children's Hospital in Colombo (Lady Ridgeway Hospital). An Epidemiologist from the Central Epidemiological Unit visits the hospital at least three days a week and checks the wards for cases of AFP. In addition, 55 sentinel surveillance sites have been set up since 1996 in major hospitals in every DPDHS Division where Consultant Paediatricians are in place. Regional Epidemiologists are expected to visit their respective sentinel sites in the regions at least once a week. A monthly report of cases of AFP including a nil report is received from the Regional Epidemiologists at the Epidemiological Unit in Colombo.

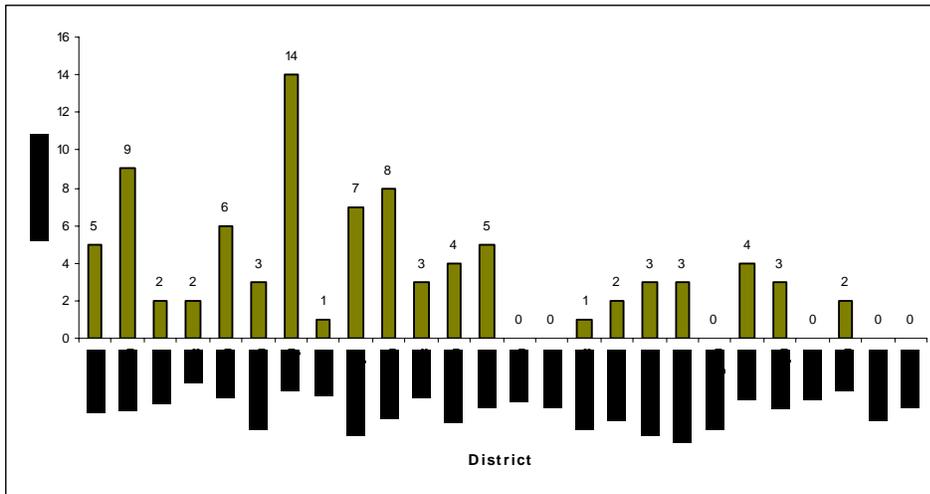
Weekly reports of AFP cases including zero or nil reports from the 58 sentinel sites in the entire country are being monitored at the Central Epidemiological Unit. Infection Control Nurses (ICN) of each sentinel site are responsible for sending this weekly return.

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

Geographical Distribution of AFP cases 2007

A total of 87 AFP cases were reported for the year 2007 (Fig.1). This yielded a non polio AFP rate of 1.6 per 100,000 under 15 year old population. The highest number of cases, 14 (9%) was reported from Kandy DPDHS Division. Nine cases were reported from Gampaha DPDHS Division and eight from Ratnapura DPDHS division. Highly populated Central and Western provinces accounted for 22 (25%) and 16 (18%) cases respectively. All Provinces and most DPDHS divisions had reported AFP cases during the year. However Colombo, Kalutara, Galle and Kurunegala, had less than the required number and a non polio AFP rate below 2 per 100,000 under 15 year old population. Kalmunai, Ampara, Mannar, Mulativu, Kilinochchi and Moneragala districts did not report any cases for the year.

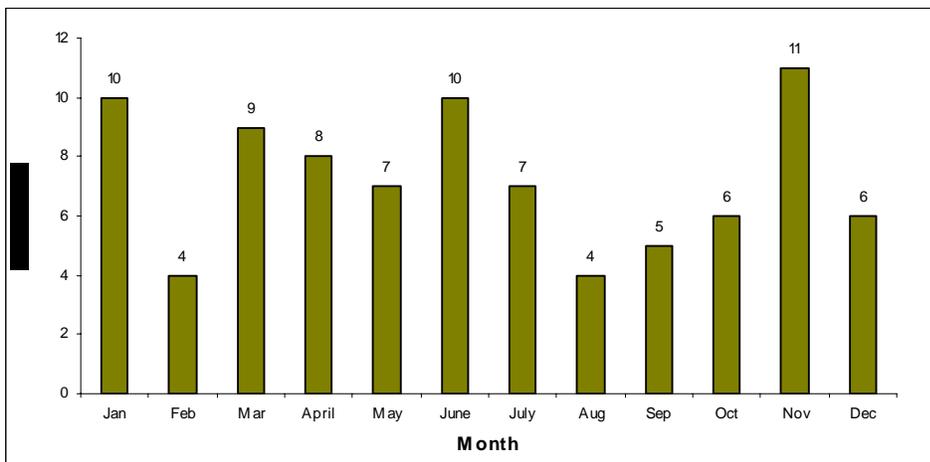
Fig. I Geographical distribution of AFP cases - Year 2007



Seasonal Distribution of AFP Cases 2007

November recorded the highest number of cases for the year. The number reported was 11 (13%). Ten cases each were reported in January and June. Lowest number of cases (4) each was seen in February and August. As in previous years there was no trend observed in this distribution. The figure II below shows the distribution of AFP cases for the year 2007 (Fig. II).

Fig. II Distribution of AFP Cases according to Month 2007



AFP Surveillance Performance by Hospitals 2007

The main sentinel site for AFP out of the 58 sentinel sites in the country, Lady Ridgeway Children’s Hospital (LRH), Colombo which is a tertiary paediatric care center receiving referrals from other hospitals all over the country had reported almost one fourth of the total case load (24%) this year. Twenty one cases had been reported from LRH in 2007. Teaching Hospital Kandy, another referral centre which drains a vast area in the country has reported 13 cases (15%) during the year.

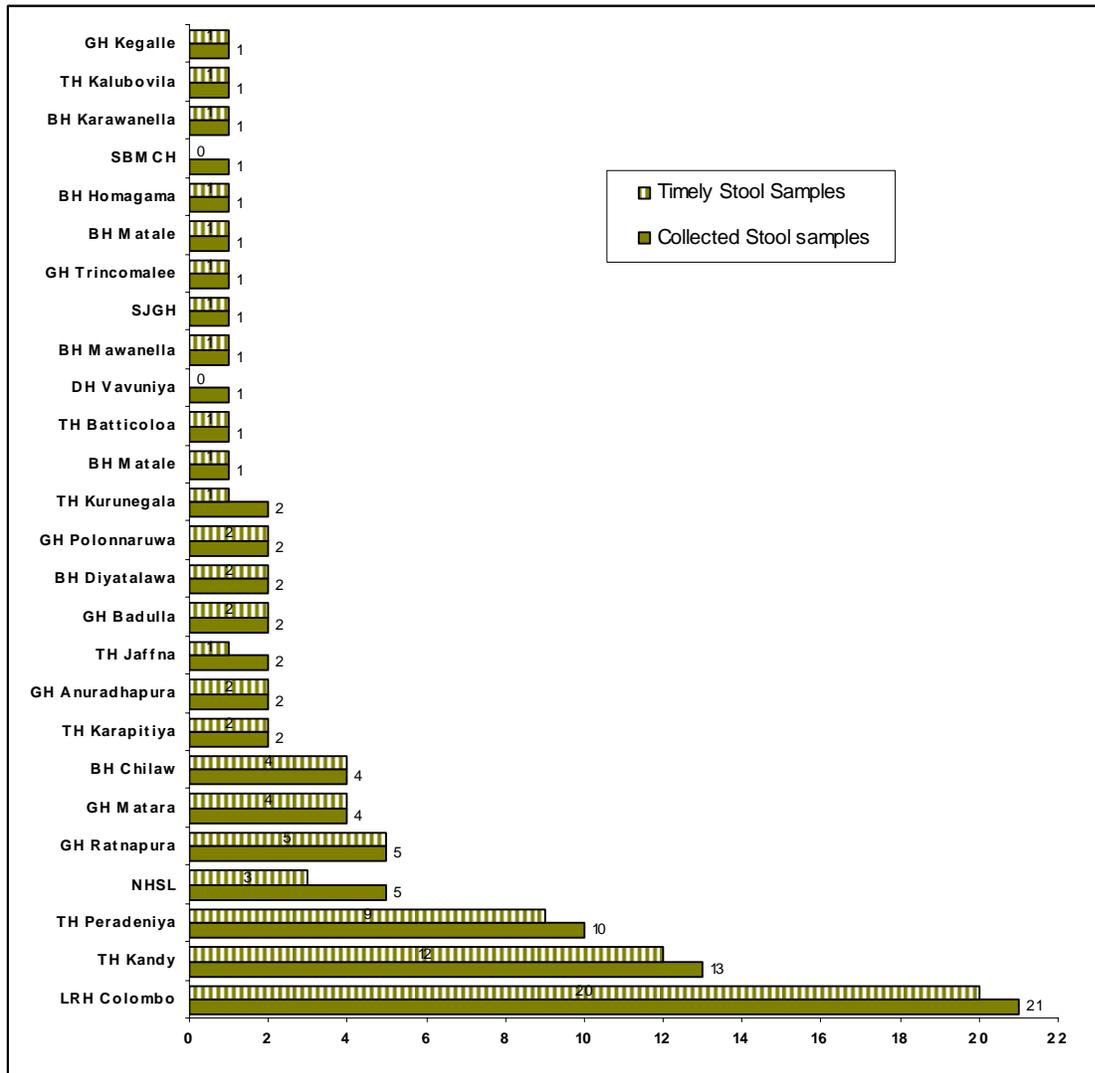
Teaching Hospital Jaffna and General Hospital Vavuniya from the conflict ridden Northern Province of the country reported 2 and 1 AFP cases respectively during 2007.

All cases of AFP reported should have two stool samples collected within 14 days of onset of the paralysis. This is one of the main responsibilities of the sentinel hospitals in the AFP surveillance programme. Eighty percent of cases should have two such timely stool samples to fulfill the criteria stipulated by the WHO.

In 2007, 2 samples of stools were collected for virology within 14 days of the onset of paralysis from 78 cases (90%) of the 87 cases reported. Samples of stools were not collected from only one AFP case that was reported from Teaching Hospital Jaffna.

The figure III below shows the distribution of AFP cases notified from hospitals with their performance in collection of stools for the year 2007 (Fig. III).

Figure III. Performance of Sentinel Hospitals 2007

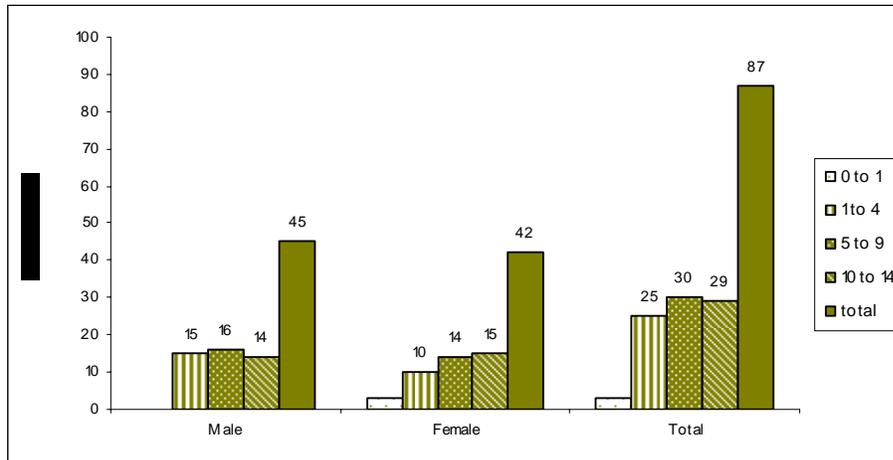


Age and Sex Distribution of AFP Cases 2007

Almost similar number of male and female AFP cases was reported in 2007. Out of the total of 87 AFP cases, 44 (51%) were males and 43 (49%) were female children. This is in contrast to the trend observed last year where male cases were more than female cases.

In 2007 unlike in the previous year, male predominance was only observed in 1-4 year and 5-9 year age groups. A majority (67%) of the cases (59) were 5 – 14 years old. Twenty five children (29%) were between 1 – 4 years of age and only 3 children were less than 1 year of age (Fig.IV).

Fig. IV Age and Sex Distribution of AFP Cases 2007



Immunization Status of AFP Cases Reported in 2007

All AFP cases (100%) reported during the year 2007 were age appropriately immunized with OPV. Data supporting the immunization status of the children had been obtained from the Child Health Development Record (CHDR) by the medical officers treating the patients or by the Medical Officer of Health (MOH) team.

Final Classification of AFP Cases 2007

In 2007 all 87 cases reported were assigned a final classification. A majority of the cases 61 were classified as Guillan Barre syndrome (GBS) by the respective clinicians who reported these cases. This amounted to 70% of the total caseload in the year. This trend has been observed in the surveillance programme of the country throughout the recent years.

There were 4 cases (4%) each of Miller Fisher Syndrome and Functional disorder. Table 1 below shows the final classification of the AFP cases for the year.

Table 1. Distribution of Final Classification of AFP Cases 2007

Diagnosis	Number of AFP Cases (%)
Guillan Barre Syndrome	68 (78%)
Miller Fisher Syndrome	5 (6%)
Functional disorder	3 (3%)
Transverse Myelitis	1(1%)
Mumps Encephalitis	1(1%)
Right Common Peroneal Leision	1(1%)
Congenital syringomyelia	1(1%)
Viral Myalgia	1(1%)
Aseptic Meningitis	1(1%)
Post Viral Cerebellitis	1(1%)
Extramedullary Lipoma	1(1%)
Acute Cerebellar Syndrome	1(1%)
Rheumatic Chorea	1(1%)
Transient Unsteady Gait	1(1%)
Total	87

Feedback Information on AFP Cases

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

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

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

Indicators of AFP Surveillance and Laboratory performance 2007

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

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

Sri Lanka achieved a non-polio AFP rate (Number reported/number expected) of 1.6 during the year 2007. This exceeds the expected rate of 1 per 100,000 population of under 15 year old children. This rate is lower than the non-polio AFP rate of 2.2/100,000 under 15 year old population reported in 2006. In the year 2007 most of the districts in the country have reported the expected number or more AFP cases. The AFP rate is monitored for each district and surveillance is strengthened in those districts where the AFP rate has been low during the previous year.

2. Completeness of reporting

2.1 Weekly reporting of Notifiable Diseases

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

In the previous year the completeness of weekly notifiable disease reporting was 94%.

2.2 Weekly reporting of AFP cases from institutions

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

In 2007 the completeness of weekly reporting of AFP cases from those institutions was 79%.

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

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

3. Timeliness of reporting

3.1 Weekly reporting of Notifiable Diseases

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

3.2 Weekly reporting of AFP cases from institutions

During the year 2007 the timeliness of weekly reporting of AFP was extremely poor at 45%. However it showed a slight improvement from the previous year where this figure stood at 38%. Steps have been taken to educate the infection control nurses who are responsible for

this activity in sentinel sites with repeated supervisions by the central as well as the regional level authorities.

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

Monthly reports received from REE before the 20th of the following month are considered as timely. Timeliness of monthly reporting in 2007 was unsatisfactory at 26%.

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

All AFP cases notified should be examined and investigated by an epidemiologist (at central or regional level) within 48 hrs of notification. In the year 2007, 100% of the AFP cases reported were investigated by an epidemiologist within 48 hours of notification.

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

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

In 2007, 2 samples of stools were collected for virology within 14 days of the onset of paralysis from 76 cases (87%) of the 87 cases reported. Samples of stools were not collected from only one AFP case that was reported from Teaching Hospital Jaffna.

Stool samples from contacts

Following notification, stools samples are collected from 3 to 5 contacts of all AFP cases during the outbreak response activities carried out by the respective MOH. The contact stool sampling was satisfactory during the previous year and samples of stools were collected from contacts of 78 (90%) AFP cases reported in 2007.

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

All the reported AFP cases should be followed up at 60 days of onset of paralysis by an epidemiologist at central or regional level for presence of residual paralysis. In 2007, all 87 cases reported have been followed up after 60 days of onset of paralysis. It therefore achieved a 100% follow up rate.

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

In the year 2007, 19 samples out of the total of 197 samples collected have been received after 3 days of being collected. This amounts to a 90% of the samples of stools being received timely.

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

In 2007, out of the 197 samples of stools collected from 87 AFP cases 188 samples were in 'good' condition (95%) on arrival at the laboratory.

Good condition means that upon arrival:

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

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

In the previous year out of the 197 samples of stools collected and sent, results of all 197 specimens of stools were reported within 28 days. This achieved the target with a percentage of 100%.

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

Non polio enterovirus was isolated from samples of stools of 17 cases out of the total 87 cases (9%). This is just below the expected target of 10%. Wild poliovirus was not isolated at the MRI during 2007.

National Polio Expert Committee Meetings 2007

The National Polio Expert Committee consists of experts from fields of paediatrics, virology, epidemiology, clinical neurology and neurophysiology. The expert committee meets once every quarter to discuss AFP cases that could not be discarded on laboratory results. In 2007, six such AFP cases were presented to the committee for deliberations. All these cases had stools samples collected late and had residual paralysis at 60 days of onset of paralysis. All of them were reviewed and discarded by the Expert committee as non Polio AFP cases with diagnosis of Guillain Barre' Syndrome in 4 of the cases.