WEEKLY EPIDEMIOLOGICAL REPORT
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## Coverage, quality and factors affecting special surveillance investigations of communicable diseases : Survey findings in the Gampaha district (part 1)

Surveillance is ongoing, systematic collection, analysis and interpretation of outcome specific data for use in planning, implementing and evaluating public health policies and practices. It is the epidemiological foundation for modern public health. The scope of the surveillance is broad and ranges from early warning systems for rapid response in the case of communicable diseases, to planned response in the case of non communicable diseases.

Though the surveillance of non communicable diseases is as equally important as communicable diseases in the context of the epidemiological transition in Sri Lanka, since early days, Sri Lanka's main focus has been on surveillance of communicable diseases. The ordinance of quarantine and disease prevention enacted in 1897 and its subsequent amendments have acted as the legal basis for this enhanced focus. Currently 26 communicable diseases and acute flaccid paralyses are subject to routine surveillance in Sri Lanka. Complementary to the routine disease surveillance system, special surveillance is conducted for fifteen selected diseases with a view to obtaining more information than available through the routine surveillance system.

According to the WHO assessment in 2003, Sri Lanka has a good surveillance system. However, there are many aspects that can and should be improved in communicable disease surveillance system of Sri Lanka. One such area is the coverage and quality of the investigation of diseases coming under the special surveillance system.

Coverage of special surveillance in Sri Lanka is below the globally accepted surveillance targets for many diseases. Several investigated cases are incomplete and quality of these investigations is poor. These impede the identification of temporal, spatial and personal determinants of diseases for initiating control and preventive measures. Epidemiological inferences based on these surveillance data of low coverage and poor quality prove to be hardly generalisable for initiating effective action.

Though these deficiencies have been identified by the Epidemiology Unit, there has been a multitude of factors affecting the special investigation process at the divisional level useful for district programme managers. District managers need to conduct investigations to identify these factors existing at the divisional level. They may be specific and unique to their district or division. It is also essential that these factors are identified with a view to providing specific and practical recommendations to improve the coverage and quality of special surveillance.

Furthermore, cross checking and verifying source documents at the level of origin enable arriving at a realistic estimate of the coverage. Simultaneously, gathering data directly from the field health staff involved in investigations will help eliciting multifaceted aspects of impediments to conducting special investigations. Studies focusing on aforesaid issues conducted at the divisional level are deemed necessary to address them at the same level in an effective manner. Against this background, a study was designed to elicit some vital aspects of special surveillance in the Gampaha district.

The objectives of the study were to determine the coverage of investigations of com-

| *Contents* | *Page* |
|---|---|

municable diseases eligible for special surveillance, assess the completeness and legibility of special surveillance investigation forms, describe the time taken for the special surveillance investigation forms to reach the Epidemiology Unit from the time of confirmation of the disease and to describe factors affecting investigation of communicable diseases eligible for special surveillance as reported by the Public Health Inspectors (PHII).

The descriptive cross sectional study comprised two components. In the first component the coverage and quality of the investigation of communicable diseases eligible for special surveillance was determined. Quality of the investigation was assessed in terms of completeness, legibility of completed special surveillance investigation forms and the time taken by the special surveillance investigation forms to reach the EU from the date of confirming the disease by the PHII.

All confirmed communicable diseases, eligible for special surveillance by the field health staff in all MOH offices in the Gampaha District during the year 2008 were studied . Out of 15 diseases eligible for special surveillance, Acute Flaccid Paralysis (AFP), Dengue, Viral Hepatitis and Leptospirosis were not included in the study as AFP has an entirely different procedure of surveillance from other diseases. Other three diseases were only subject to special surveillance at respective sentinel site hospitals.

All confirmed cases of notifiable diseases eligible for special surveillance by the field health staff during the year 2008were taken from Infectious Disease Registers (IDR) of all MOH offices. To ensure the completeness of the list, entries in the IDR were cross checked with the entries in the Notification Register (NR) and completed CDR part I forms available in the MOH office available for supervision and verification of the accuracy of entries in the NR and IDR.

Based on the WHO definition of "completeness of medical records", the completeness of special surveillance investigation forms was defined as the presence of a special investigation form with availability of a response to all variables in the special surveillance investigation form.

***Completeness of special surveillance investigation forms were determined as***

$$completeness = \frac{number\ of\ completed\ data\ items}{number\ of\ data\ items\ to\ be\ filled} \times 100$$

"**Number of data items to be filled** '' was defined as the data items for which a tick or crossing a mark was required, or a number, word, phrase or a sentence had to be written.

**"Number of completed data items"** was defined as items that had been filled by writing a number, word, phrase, crossing a mark or a tick.

The **legibility** was defined as "ability to read the given value or a given data item at first sight without the help of a second person under adequate illumination".

***Legibility of special surveillance investigation forms were determined as***

$$legibility = \frac{number\ of\ legible\ data\ items}{number\ of\ data\ items\ that\ had\ been\ completed} \times 100$$

**"Number of data items that had been completed"** were defined as those items that had been completed by writing a number, word, phrase or a sentence. Items which required a tick or marking a cross were not considered in this definition when calculating legibility.

**Number of legible data items** was defined as those completed data items which were able to be read at first sight without the help of a second person under an adequate illumination.

The date indicated by the date stamp of the Epidemiology Unit on the special surveillance investigation form was taken as the **"date of receiving the special surveillance investigation form at the** Epidemiology Unit **"**

The date of completing the investigation by the PHI of the disease in the IDR was taken as the **"date of confirmation of the disease for which the special surveillance investigation form has been filled."**

**"Time taken for the special surveillance investigation forms to reach the** Epidemiology Unit **"** was defined as the difference between the **"date of receiving the special surveillance investigation form at the** Epidemiology Unit**"** and the **"date of confirmation of the disease for which the special surveillance investigation form has been filled.**

The component of the study assessing factors affecting investigation of communicable diseases eligible for special surveillance by the PHII in the Gampaha district included all area PHII, including those who simultaneously covered up duties of SPHI in 14 MOH areas in the district during the year 2008. The participation rate of PHII was out of 102 area PHII, 93 PHII participated to the study.

A Self Administered Questionnaire (SAQ) designed based on the results of a Focus Group Discussion with PHII attached to the MOH office Warakapola in the adjacent Kegalle District. was used to collect data on factors affecting special investigations. It was found that the overall coverage of the special surveillance investigations of communicable diseases eligible for special surveillance at field level in Gampaha district was low (31.6%) in 2008. There was a district variation of coverage from zero percent to 92.2 % in MOH offices within the district. Therefore, it is appropriate that that the area MOH should review the special surveillance activities of PHII at MOH level during monthly conferences. It is also suggested that practical issues are identified and solutions are suggested wherever possible. The Regional Epidemiologist (RE) should review surveillance activities in the district quarterly to find out intra district variations and introduce corrective measures through the Regional Director of Health services.


to be continued No.07

## Table 1: Vaccine-preventable Diseases & AFP

30th January- 05th February - 2010(05th Week)

| Disease | No. of Cases by Province | | | | | | | | | Number of cases during current week in 2010 | Number of cases during same week in 2009 | Total number of cases to date in 2010 | Total number of cases to date in 2009 | Difference between the number of cases to date in 2010 & 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W | C | S | N | E | NW | NC | U | Sab | | | | | |
| Acute Flaccid Paralysis | 00 | 00 | 01 | 00 | 01 | 00 | 01 | 00 | 00 | 03 | 02 | 07 | 07 | 0.0 % |
| Diphtheria | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | - |
| Measles | 01 | 01 | 00 | 00 | 00 | 03 | 01 | 03 | 00 | 09 | 03 | 08 | 15 | - 46.7 % |
| Tetanus | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 03 | 04 | - 25.0 % |
| Whooping Cough | 00 | 00 | 00 | 00 | 01 | 00 | 00 | 00 | 00 | 01 | 01 | 02 | 02 | 0.0 % |
| Tuberculosis | 48 | 39 | 34 | 26 | 27 | 00 | 16 | 00 | 00 | 190 | 154 | 888 | 784 | + 13.2 % |

## Table 2: Newly Introduced Notifiable Disease

30th January- 05th February - 2010(05th Week)

| Disease | No. of Cases by Province | | | | | | | | | Number of cases during current week in 2010 | Number of cases during same week in 2009 | Total number of cases to date in 2010 | Total number of cases to date in 2009 | Difference between the number of cases to date in 2010 & 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W | C | S | N | E | NW | NC | U | Sab | | | | | |
| Chickenpox | 12 | 06 | 11 | 05 | 00 | 11 | 10 | 02 | 04 | 61 | 119 | 301 | 652 | + 53.8 % |
| Meningitis | 05 KT=2 CO=3 | 01 ML=1 | 03 GL=3 | 00 | 01 BT=1 | 05 KR=5 | 00 | 01 MO=1 | 11 KG=1 RP=11 | 27 | 15 | 204 | 96 | + 112.5 % |
| Mumps | 03 | 01 | 02 | 03 | 00 | 05 | 01 | 02 | 02 | 19 | 21 | 86 | 182 | - 52.7 % |
| Leishmaniasis | 00 | 00 | 03 MT=3 | 00 | 02 TR=2 | 00 | 07 AP=4 PL=3 | 00 | 00 | 12 | 02 | 39 | 30 | + 30.0 % |

### Key to Table 1 & 2

Provinces: W: Western, C: Central, S: Southern, N: North, E: East, NC: North Central, NW: North Western, U: Uva, Sab: Sabaragamuwa.

DPDHS Divisions: CB: Colombo, GM: Gampaha, KL: Kalutara, KD: Kandy, ML: Matale, NE: Nuwara Eliya, GL: Galle, HB: Hambantota, MT: Matara, JF: Jaffna, KN: Killinochchi, MN: Mannar, VA: Vavuniya, MU: Mullaitivu, BT: Batticaloa, AM: Ampara, TR: Trincomalee, KM: Kalmunai, KR: Kurunegala, PU: Puttalam, AP: Anuradhapura, PO: Polonnaruwa, BD: Badulla, MO: Moneragala, RP: Ratnapura, KG: Kegalle.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps.

Special Surveillance: Acute Flaccid Paralysis.

Leishmaniasis is notifiable only after the General Circular No: 02/102/2008 issued on 23 September 2008.

## Table 4: Selected notifiable diseases reported by Medical Officers of Health

30th January– 05th February - 2010(05th Week)

| DPDHS Division | Dengue Fever / DHF* | | Dysentery | | Encephalitis | | Enteric Fever | | Food Poisoning | | Leptospirosis | | Typhus Fever | | Viral Hepatitis | | Human Rabies | | Returns Re- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | % |
| Colombo | 81 | 664 | 0 | 17 | 1 | 1 | 2 | 10 | 0 | 5 | 6 | 42 | 0 | 1 | 1 | 7 | 1 | 1 | **85** |
| Gampaha | 89 | 686 | 2 | 5 | 3 | 4 | 1 | 3 | 0 | 0 | 6 | 18 | 0 | 0 | 4 | 13 | 0 | 1 | **67** |
| Kalutara | 31 | 143 | 3 | 19 | 0 | 2 | 1 | 4 | 0 | 6 | 3 | 22 | 0 | 0 | 0 | 5 | 0 | 0 | **100** |
| Kandy | 31 | 231 | 7 | 50 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 9 | 2 | 21 | 2 | 11 | 0 | 1 | **78** |
| Matale | 44 | 159 | 7 | 20 | 0 | 0 | 2 | 4 | 0 | 0 | 2 | 16 | 0 | 0 | 2 | 8 | 0 | 0 | **92** |
| Nuwara | 2 | 29 | 1 | 10 | 0 | 0 | 0 | 17 | 0 | 0 | 1 | 4 | 2 | 10 | 1 | 4 | 0 | 0 | **92** |
| Galle | 15 | 51 | 10 | 21 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 1 | 0 | 1 | **89** |
| Hambant | 22 | 71 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 10 | 3 | 25 | 1 | 1 | 0 | 0 | **82** |
| Matara | 9 | 45 | 1 | 15 | 1 | 1 | 1 | 1 | 2 | 34 | 2 | 13 | 8 | 31 | 0 | 5 | 0 | 0 | **82** |
| Jaffna | 329 | 1130 | 7 | 23 | 0 | 0 | 22 | 118 | 1 | 4 | 0 | 0 | 4 | 52 | 1 | 9 | 0 | 0 | **58** |
| Kili- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | **0** |
| Mannar | 5 | 31 | 1 | 9 | 0 | 0 | 3 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | **100** |
| Vavuniya | 30 | 366 | 2 | 9 | 0 | 1 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | **75** |
| Mullaitivu | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| Batticaloa | 77 | 367 | 3 | 12 | 0 | 0 | 0 | 4 | 0 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | **85** |
| Ampara | 3 | 11 | 0 | 10 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 10 | 0 | 0 | 0 | 4 | 0 | 0 | **29** |
| Trincomal | 4 | 237 | 5 | 27 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 6 | 2 | 4 | 0 | 4 | 0 | 0 | **60** |
| Kurunega | 44 | 239 | 8 | 41 | 0 | 2 | 1 | 6 | 0 | 0 | 14 | 25 | 2 | 7 | 1 | 9 | 0 | 0 | **95** |
| Puttalam | 84 | 292 | 0 | 17 | 0 | 1 | 2 | 13 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | **89** |
| Anuradha | 66 | 326 | 0 | 12 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 5 | 0 | 1 | **74** |
| Polonnar | 2 | 35 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 21 | 0 | 0 | 1 | 7 | 0 | 0 | **100** |
| Badulla | 14 | 84 | 4 | 19 | 0 | 0 | 1 | 9 | 0 | 6 | 0 | 9 | 0 | 5 | 0 | 7 | 0 | 0 | **47** |
| Monaraga | 11 | 53 | 5 | 37 | 0 | 0 | 4 | 12 | 0 | 0 | 3 | 9 | 2 | 5 | 1 | 1 | 0 | 0 | **82** |
| Ratnapur | 20 | 109 | 1 | 33 | 0 | 3 | 1 | 4 | 2 | 8 | 2 | 36 | 0 | 15 | 3 | 23 | 0 | 1 | **61** |
| Kegalle | 23 | 90 | 1 | 6 | 2 | 3 | 4 | 7 | 0 | 2 | 5 | 21 | 1 | 3 | 4 | 15 | 0 | 0 | **91** |
| Kalmunai | 58 | 208 | 1 | 18 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | **54** |
| SRI LANKA | **1094** | **5657** | **70** | **448** | **08** | **21** | **46** | **249** | **05** | **71** | **52** | **284** | **27** | **186** | **23** | **147** | **01** | **06** | **75** |

Source: Weekly Returns of Communicable Diseases WRCD).
*Dengue Fever / DHF refers to Dengue Fever / Dengue Haemorrhagic Fever.
**Timely refers to returns received on or before 05th February, 2010 Total number of reporting units =311. Number of reporting units data provided for the current week: 240
A = Cases reported during the current week. B = Cumulative cases for the year.

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