# Surveillance Case Definitions for Notifiable Diseases in Sri Lanka

## 2nd Edition

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*Epidemiology Unit*
*Ministry of Health - 2011*

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***2011***



1st Edition - 2005
2nd Edition - 2011

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# Abbreviations and acronyms used in this handbook

| | | |
|---|---|---|
| ABST | = | Antibiotic Sensitivity Test |
| AFP | = | Acute Flaccid Paralysis |
| aTd | = | adult Tetanus diphtheria Vaccine |
| CRS | = | Congenital Rubella Syndrome |
| CSF | = | Cerebro Spinal Fluid |
| CXR | = | Chest X ray |
| DDHS | = | Divisional Director of Health Services |
| DF | = | Dengue Fever |
| DHF | = | Dengue Hemorrhagic Fever |
| DPT | = | Diphtheria-Pertussis-Tetanus |
| DSS | = | Dengue Shock Syndrome |
| DT | = | Diphtheria-Tetanus Vaccine |
| ELISA | = | Enzyme linked Immunosorbent Assay |
| EPI | = | Expanded Programme on Immunization |
| FA | = | Fluorescent Antibody |
| GBS | = | Guillain Barre Syndrome |
| GIS | = | Geographic Information System |
| HBcAg | = | Hepatitis B core antigen |
| HBsAg | = | Hepatitis B surface antigen |
| HCV | = | Hepatitis C Virus |
| HDV | = | Hepatitis D Virus |
| HEV | = | Hepatitis E Virus |
| HI | = | Haemoagglutination Inhibition |
| ICD | = | International Classification of Diseases |
| IFA | = | Immuno Fluoracence Antibody |
| IgG | = | Immunoglobulin class G |
| IgM | = | Immunoglobulin class M |
| JE | = | Japanese Encephalitis |
| MAT | = | Microscopic Agglutination Test |
| ml | = | milliliter |
| MOH | = | Medical Officer of Health |
| MRI | = | Medical Research Institute, Colombo |
| NT | = | Neonatal Tetanus |
| PCR | = | Polymerase Chain Reaction |
| PCV | = | Packed Cell Volume |
| PHA | = | Passive Haemoagglutination |
| PHI | = | Public Health Inspector |
| rRT | = | realtime Reverse Transcriptase |
| RDS | = | Respiratory Distress Syndrome |
| RDT | = | Rapid Diagnostic Test |
| SARS | = | Severe Acute Respiratory Syndrome |
| SAT | = | Standard Agglutination Test |
| TB | = | Tuberculosis |
| TT | = | Tetanus Toxoid |
| WER | = | Weekly Epidemiological Report |
| WHO | = | World Health Organization |
| WRCD | = | Weekly Return of Communicable Diseases |

# FOREWORD

The Epidemiology Unit of the Ministry of Health is the leading institution in Sri Lanka which carries out epidemiological surveillance and coordinates disease surveillance with other specialized campaigns, health institutions, other governmental and non-governmental agencies. In modern-day, public health emergencies are becoming ever more common. Sri Lanka's experience of Dengue Fever and international experiences of Influenza outbreak underlines the importance of strong public health services, based on sound technical principles.

Accurate and stringent measures of disease surveillance are one of the best strategies to face the challenges of public health emergencies of disease outbreaks. The second edition of this handbook prepared by the Epidemiology Unit will undoubtedly strengthen disease control and prevention activities in Sri Lanka.

**Dr. Upali A. Mendis**
Director General of Health Services
08 August 2011

# Preface

Disease surveillance is a main strategy in disease prevention and control. Surveillance not only gives us accurate epidemiological data but also guides us in monitoring and controlling of the diseases.

Surveillance and notification goes hand in hand. The notification system in Sri Lanka is well established and functioning remarkably well. The list of notifiable diseases was updated several times in the past. New additions were also made recently. Severe Acute Respiratory Syndrome (SARS) was added to the list of notifiable diseases in 2003, Chicken pox, Meningitis and Mumps were added in 2005. The advisory committee on communicable diseases has recommended the addition of Leishmaniasis to the list of notifiable diseases in Sri Lanka in 2008. Therefore surveillance case definition of Leishmaniasis is included in this second edition of the handbook. Surveillance case definitions for Influenza, though Influenza is not a notifiable disease, are included in this handbook, considering the international importance and to facilitate ongoing national Influenza surveillance system.

Development and use of standard case definitions which are simple and applicable in any geographic location in Sri Lanka is of paramount importance. Any health officer in any geographic area in Sri Lanka will be able to effectively use the surveillance case definitions given in this handbook for diseases under epidemiological surveillance.

I take this opportunity to thank all experts who contributed to the development of this handbook on "Surveillance Case Definitions for Notifiable Diseases in Sri Lanka". I wish this handbook will contribute to further improvement of disease surveillance activities in Sri Lanka.

**Dr. Paba Palihawadana**
The Epidemiologist, Ministry of Health

08 August 2011



# Notification System in Sri Lanka

The quarantine and prevention of diseases ordinance of 1897 and subsequent amendments provides legal provisions for implementation of the notification of diseases in Sri Lanka. The regulations under this ordinance clearly spell out that:

1. Every Medical Practitioner or person professing to treat diseases, who attends on any person suffering from any disease set out in column I shall notify forthwith to the proper authority set out in column II (Annex I, Page 42).
2. Any person who contravenes this regulation without lawful authority or excuse shall be guilty of an offence under the Quarantine and Prevention of Diseases Ordinance and such person shall be prosecuted in Magistrate Court under Section 4 of the Ordinance.

All medical practitioners (In government and private medical institutions - Intern House Officers, Grade Medical Officers, other Medical Officers and Consultants, General Practitioners, Family Physicians) who attend to patients with a tentative diagnosis of the diseases in the notifiable diseases list column I, should notify the disease to proper authority. The disease should be notified immediately at the time of first suspicion without waiting for laboratory test results or confirmatory tests. Making the notification at the earliest possible is of paramount importance thus enabling the field public health staff to start the necessary preventive and control measures immediately.

The notification card (Notification of a communicable disease – H 544) should be filled with especial emphasis on writing the patient's residential address (where it is suspected the patient contacted the disease) so that the range Public Health Inspector (PHI) can trace the residence easily. The notification card should be addressed and sent to the Medial Officer of Health (MOH) of the area where the patient is residing in.

Each and every ward in each and every medical institution where inpatient treatment facilities are available should maintain a register of all notifications at the ward. This "Ward Notification Register" should carry the following data in a table format.

| | | |
|---|---|---|
| 1. Date (of notification) | 5. Age | 9. Remarks |
| 2. Serial number | 6. Sex | |
| 3. Name of the patient | 7. Disease | |
| 4. Address | 8. Notified to whom | |

The completed notifications should be sent to the Director/Medical Superintendent/ District Medical Officer of the institution daily where data are entered in an "Institutional Notification Register" and posted to the MOH of the relevant area daily.

The MOH on receipt of the Notification will enter the data in "Notification Register" of the MOH office and forward it to the relevant PHI in whose area the patient is a resident presumably contracted the disease. The notification register contains the following data in a table format.

1. Serial Number
2. Name of Patient
3. Address
4. Age
5. Sex
6. Disease
7. Date of Notification
8. Notified by whom
9. Date notification card received
10. PHI area
11. Date notification card sent to PHI
12. Date notification card received from PHI
13. Remarks

On receipt of H-544 the PHI enters the data in his letter inward register and will visit the household of the patient. During his visit he carries out a basic public health investigation into the reported case and confirms or refutes the disease. He also carries out necessary and relevant health education and preventive measures aimed at arresting any further cases and spreading of the disease. Then the PHI will complete the form H-411 (communicable disease report part 1) and enter the relevant data in his outward register. The data of all confirmed cases are also entered in the Infectious Diseases register (H-700) at the PHI office. The PHI will then return the completed H-411 and H-544 to the MOH office.

At the MOH office on receiving the H-544 and H-411 forms from the PHI, the MOH updates the notification register and then enters data of confirmed cases in the Infectious Diseases register – H-700. For each confirmed case the form H-411a is completed using the data on the form H-411 sent by the PHI.

Every week the MOH completes the weekly return of communicable disease (WRCD – H-399) based on notification register and Infectious Diseases register. The WRCD and H-411a forms for the particular week are sent to the Epidemiological Unit, Colombo with copy to the Regional Epidemiologist. A third copy should be retained in the MOH office for future reference. This is the most important activity of the MOH in the notification system for which he/she is personally responsible. The MOH has to fill in the WRCD and post it on Saturday, every week.

The MOH/DDHS is also responsible for updating the Maps and Charts in the office according to the instructions given in the divisional circular pub 110 of 1st November 1973.

For selected diseases which are under special surveillance the MOH has to complete the special investigation forms and send same to the Epidemiology Unit.

Every week the Epidemiology Unit prepares a consolidated return of all WRCD. This Weekly Epidemiological Return (WER) is sent to all health institutions in the country including the MOH offices, thus completing the data flow cycle. WER contains the consolidated data on notifications by district, from all reporting MOH areas of the country.



# 1. Acute Flaccid Paralysis

**1.1.** **ICD 10 Classification – Acute Flaccid Paralysis (AFP) is not classified in ICD 10. The following ICD 10 categories are included in differential diagnosis for AFP: A80 - 89, G61, G37, M54, G81, G07, A17, M49, G72, M60, G70, G04, B05, B58 -** (for further details refer ICD 10, Volume 1, WHO, 1992)

**1.2.** **Surveillance case definition**
Any child under fifteen years of age with acute, flaccid paralysis* or any person with paralytic illness at any age when poliomyelitis is suspected.

*Including Guillain Barre syndrome

**1.3.** **Rationale for surveillance**
In Sri Lanka Acute Anterior Poliomyelitis was made a notifiable disease in 1944. The date of onset of the last virologically confirmed wild poliovirus case is 9th November 1993. The clinical manifestations including acute flaccid paralysis which appear in several other neurological conditions show similarities with that of acute poliomyelitis. Therefore to detect any case of acute poliomyelitis and all clinically suspected cases of acute flaccid paralysis has to be monitored and included in polio surveillance system.

The world health assembly in 1988 adopted a resolution to eradicate poliomyelitis by the year 2000. Highly sensitive surveillance for AFP, including immediate case investigation, specimen collection which is critical to detect wild poliovirus circulating in every infected geographical area is developed with the ultimate objective of poliomyelitis eradication.

Poliomyelitis eradication strategies in Sri Lanka include aggressive outbreak control, maintenance of high immunization coverage of oral polio vaccine among infants and children and conducting National Immunization Days and mopping up immunizations and most importantly enhanced surveillance to detect any case of AFP.

**1.4.** **Case Classification**

**1.4.1.** **Suspected:** Acute Flaccid Paralysis in any child less than 15 years of age (including those diagnosed as having GBS or infective polyneuritis for which no other cause can be identified) and any case of AFP (in a person of any age) that appears highly suspicious as poliomyelitis.

**1.4.2.** **Probable:** Suspected case which meets the surveillance case definition when reviewed by a trained officer and when an obvious cause could not be identified.

**1.4.3.** **Confirmed:** A case will be classified as confirmed if wild polio virus has been isolated from a sample of stools from a probable case.

**1.5.** **Laboratory criteria for diagnosis:**
Isolation of wild polio virus from 2 stool samples collected within 14 days of onset of paralysis, from a suspected case of acute flaccid paralysis.

**1.6. Foot notes:**

**Poliomyelitis Compatible Case:** The polio expert committee will review a suspected case under following circumstances: If wild poliovirus has not been isolated from a case due to inadequate sample of stools, or stools samples has not been collected and on follow up residual paralysis is present or the case has died or the case has been lost to follow up. a number of clinical, epidemiological and laboratory investigations will be taken into consideration by the committee. A poliomyelitis compatible case represents a failure of the surveillance system.



# 2. Chickenpox (Varicella)

**2.1. ICD 10 Classification – B 01** (for further details refer ICD 10, Volume 1, WHO, 1992)

**2.2. Surveillance case definition**

An illness with acute onset of diffuse (generalized) papulovesicular and/or vesiculopustular rash*, appearing on the trunk and face and then spreading to extremities, without other apparent cause.

*In children only few vesicles may be present

**2.3. Rationale for surveillance:**

Even though chickenpox is a mild disease in children, it can cause complications in adults, pregnant women, neonates and immuno compromised patients. Outbreaks can occur in schools and other institutional settings. Neonates whose mothers are not immune to chickenpox may suffer severe prolonged or fatal infection.

Incidence data of chickenpox is unknown in Sri Lanka. Few outbreaks of chickenpox were reported from various parts of the country during the last few years. Available data suggests an increase of reported cases of chickenpox. The national advisory committee on communicable diseases has therefore recommended strengthening of chickenpox surveillance: Chickenpox was made a notifiable disease from 2005.

**2.4. Case Classification**

**2.4.1. Suspected:** A case that is compatible with the surveillance case definition.

**2.4.2. Probable:** Not applicable.

**2.4.3. Confirmed:** A clinically suspected case which is laboratory confirmed.

**2. 5. Laboratory criteria for diagnosis:**

Detection of viral antigen/isolation of the virus from the scrapings of the skin lesions.

Demonstration of specific IgM in a serum sample from a patient with the clinical disease.

**2. 6. Foot notes:**

- Human herpes virus 3 (Varicella Zoster Virus – VZV) is the infectious agent which is a member of Herpesvirus group.
- Herpes zoster (Shingles, ICD 10 – B02) is a local manifestation of reactivation of latent Varicella infection in the dorsal root ganglia.

# 3. Cholera

**3.1.** **ICD 10 Classification – A 00** (for further details refer ICD 10, Volume 1, WHO, 1992)

**3.2.** **Surveillance case definition**

- In an area where the disease is not known to be present: severe dehydration or death from acute watery diarrhoea in a patient aged 5 years or more.

- In an area where there is a cholera epidemic: acute watery diarrhoea, with or without vomiting in a patient aged 5 years or more.

**3.3.** **Rationale for surveillance**

Cholera causes an estimated 120,000 deaths per year and is prevalent in 80 countries. The world is currently experiencing the 7th pandemic. In Africa epidemics have become more frequent and case fatality rates are high. Refugee or displaced populations are at major risk of epidemics due to the conditions prevailing in the camps (unsafe water, poor sanitation and hygiene). Control of the disease requires appropriate surveillance with universal case reporting. Health education of the population at risk and improvement of living conditions are essential preventive measures. Case reporting universally is required by the International Health Regulations.

In Sri Lanka cholera outbreaks occur on and off. The outbreak started in 1997 continued up to July 2000. The last outbreak started in July 2002 and the last reported case of confirmed cholera was in January 2003.

**Case report universally required by International Health Regulations.**

**3.4.** **Case Classification**

**3.4.1.** **Suspected:** A case that is compatible with the surveillance case definition.

**3.4.2.** **Probable:** Not applicable.

**3.4.3.** **Confirmed**: A suspected case that is laboratory-confirmed.

**3.5.** **Laboratory criteria for diagnosis**

Isolation of *Vibrio cholerae* O1 or O139 from stools in any patient with diarrhoea.

Even though it was Vibrio cholera O1 was the frequently isolated organism, O139 also been isolated in Sri Lanka.

**3.6.** **Foot notes**

Cholera does appear in children under 5 years; however, the inclusion of all cases of acute watery diarrhoea in the 2-4 year age group in the reporting of cholera greatly reduces the specificity of reporting. For management of cases of acute watery diarrhoea in an area where there is a cholera epidemic, cholera should be suspected in all patients.



# 4. Dengue Fever

**4.1.** **ICD 10 Classification – A 90** (for further details refer ICD 10, Volume 1, WHO, 1992)

**4.2.** **Surveillance case definition**

**4.2.1** **In Children:** An acute febrile illness of 2-7 days duration with 2 or more of the following: headache, retro-orbital pain, myalgia, arthralgia, flushed extremities, tender hepatomegaly, rash, leucopenia and haemorragic manifestations.

**4.2.2.** **In adults:** An acute febrile illness of 2-7 days duration with 2 or more of following: headache, retro-orbital pain, myalgia with one of the following – Leucopaenia, thrombocytopaenia or haemorragic manifestations.

**4. 3.** **Rationale for surveillance**

Dengue fever, including DHF and DSS, is the most significant arthropod-borne viral disease worldwide. It occurs in over 100 countries and territories and threatens the health of over 2,500 million people in tropical and subtropical regions. Dengue fever is a severe disease with high epidemic potential.

Surveillance of DF/DHF is paramount in early detection of outbreaks that permit the prompt and effective implementation of control measures.

Surveillance is indicated in all dengue endemic areas identified as locations where *Aedes aegypti* and *Aedes albopictus* are known to be present.

**4.4.** **Case Classification**

**4.4.1.** **Suspected:** A case compatible with the surveillance case definition.

**4.4.2.** **Probable**: A case compatible with the surveillance case definition with **one or more** of the following:

1. Recent Infection: Positive IgM antibody test in late acute or early convalescent-phase serum specimen.
2. Secondary – IgG titre ≥ 2560 HI units with or without positive IgM antibody test in late acute or early convalescent-phase serum specimen.
3. Occurrence at same location and at the time as another confirmed case/s of dengue fever.

**4.4.3.** **Confirmed**: A case compatible with the surveillance case definition which is laboratory-confirmed.

**4.5. Laboratory criteria for diagnosis**

One or more of the following:

- Isolation of the dengue virus from serum, plasma, leukocytes, or autopsy samples.
- Detection of viral genomic sequences in serum, CSF or autopsy tissues by polymerase chain reaction (PCR).
- Demonstration of a fourfold or greater rise in IgG titer to one or more dengue virus antigens in paired serum samples by ELIZA or HI assay.

**4.6. Foot notes**

- Demonstration of IgM antibody in a single serum sample taken 5 days after onset of symptoms.
- Demonstration of IgG titre ≥ 2560 HI units in a single sample is suggestive of recent secondary dengue virus infection.



# 5. Dengue Haemorrhagic Fever / Dengue Shock Syndrome

**5.1. ICD 10 Classification - A 91** (for further details refer ICD 10, Volume 1, WHO, 1992)

**5.2. Surveillance case definition:**

**Dengue Haemorrhagic Fever**

A probable or confirmed case of dengue fever **and** Hemorrhagic tendencies evidenced by

**One or more of the following:**

- Positive tourniquet test
- Petechiae, ecchymoses or purpura
- Bleeding: mucosa, gastrointestinal tract, injection sites or other
- Haematemesis or melaena

**And**

- thrombocytopenia (100,000 cells or less per $mm^3$)

**And**

- evidence of plasma leakage due to increased vascular permeability, manifested by

**One or more of the following:**

- ≥ 20% rise in average haematocrit for age and sex
- ≥ 20% drop in haematocrit following volume replacement treatment compared to baseline
- signs of plasma leakage (pleural effusion, ascites, hypoproteinaemia)

**Dengue Shock Syndrome**

All the above criteria plus evidence of circulatory failure manifested by rapid and weak pulse, narrow pulse pressure (≤20 mmHg) or hypotension for age, cold clammy extremities and restlessness.

**5.3. Rationale for surveillance**

Dengue fever, including DHF and DSS, is the most significant arthropod-borne viral disease worldwide. It occurs in over 100 countries and territories and threatens the health of over 2,500 million people in tropical and subtropical regions. Dengue fever is a severe disease with high epidemic potential.

Surveillance of DF/DHF is paramount in early detection of outbreaks that permit the prompt and effective implementation of control measures.

Surveillance is indicated in all dengue endemic areas identified as locations where *Aedes aegypti* and *Aedes albopictus* are known to be present.

**5.4. Case Classification**

**5.4.1 Suspected:** A case compatible with the surveillance case definition.

**5.4.2 Probable**: A case compatible with the surveillance case definition with **one or more** of the following:

1. Recent Infection: Positive IgM antibody test in late acute or convalescent-phase serum specimen.
2. Secondary – IgG titre ≥ 2560 HI units with or without positive IgM antibody test in late acute or convalescent-phase serum specimen.
3. Occurrence at same location and time as other confirmed cases of dengue fever.

**5.4.3 Confirmed**: A case compatible with the surveillance case definition which is laboratory-confirmed.

**5.5. Laboratory criteria for diagnosis**

**One or more of the following:**

- Isolation of the dengue virus from serum, plasma, leukocytes, or autopsy samples.
- Detection of viral genomic sequences in autopsy tissue, serum or CSF samples by polymerase chain reaction (PCR).
- Demonstration of a fourfold or greater change in IgG titer to one or more dengue virus antigens in paired serum samples by ELIZA or HI assay.

**5.6. Foot notes**

- Demonstration of IgM antibody in a single serum sample taken 5 days after onset of symptoms will be suggestive of recent dengue viral infection.
- Demonstration of IgG titire ≥2560 HI units in a single sample is suggestive of recent secondary dengue virus infection.



# 6. Diphtheria

**6.1. ICD 10 Classification – A 36** (for further details refer ICD 10, Volume 1, WHO, 1992

**6.2. Surveillance case definition**

An illness of the upper respiratory tract with stridor characterized by laryngitis, pharyngitis or tonsillitis
**and**
adherent membranes of tonsils, pharynx and/or nose.

**6.3. Rationale for surveillance**

Organized immunization programme against diphtheria commenced with the introduction of DPT in 1961. Diphtheria was made a notifiable disease in 1971. With the launch of EPI programme in 1978, incidence of diphtheria started to decline steadily and achieved elimination status in late nineties. Apart from maintaining high population immunity through immunization; maintenance of elimination status of diphtheria is based on the following measures:

1. Secondary prevention of spread through rapid investigation of close contacts, in order to ensure proper treatment.
2. Tertiary prevention of complications and deaths through early diagnosis and proper management.

Therefore surveillance data can be used to monitor levels of immunization coverage and disease as a measure of the impact of control programmes. Recent epidemics of diphtheria among adults and adolescents in newly independent states of former USSR and some European countries led to the introduction of aTd vaccine to our immunization schedule at the age of 10 – 15 years to boost up the immunity gained through infant and childhood immunization, to prevent similar outbreaks in Sri Lanka. This highlights the need for adequate surveillance and epidemic preparedness even though no cases of diphtheria have been reported for several years.

**6.4. Case Classification**

**6.4.1. Suspected: Not applicable**

**6.4.2. Probable:** A case that meets the surveillance case definition.

**6.4.3. Confirmed:** A probable case that is laboratory confirmed or linked epidemiologically to a laboratory confirmed case.

**Note:** Persons with positive *C. diphtheriae* cultures who do not meet the clinical description (i.e. asymptomatic carriers) should not be reported as probable or confirmed diphtheria cases.

**6.5. Laboratory criteria for diagnosis**

Isolation of toxigenic *Corynebacterium diphtheriae* from a clinical specimen.

**Note:** A rise in serum antibody (fourfold or greater) is of interest only if both serum samples were obtained before administration of diphtheria toxoid or antitoxin. This is not usually the case in surveillance, where serological diagnosis of diphtheria is thus unlikely to be an issue.

# 7. Dysentery

**7.1.** **ICD 10 Classification – A 02, A 03, A 04, A 06, A 09** (for further details refer ICD 10, Volume 1, WHO, 1992)

**7.2.** **Surveillance case definition**
An illness of variable severity characterized by diarrhoea with blood and or mucus and with or without fever, nausea, abdominal cramps, and tenesmus.

**7.3.** **Rationale for surveillance**
Bacillary dysentery is the common cause of dysentery found in Sri Lanka. Commonest organisms responsible belong to genus Shigella. The *Shigella sonnei* is the most common shigellosis in Sri Lanka. Passage of blood and mucus may not be a feature associated with *Shigella sonnei* dysentery. Amoebic dysentery is less commonly reported. All dysentery cases should be reported collectively irrespective of the aetiology.

Shigellosis can cause serious complications such as Haemolytic Uraemic Syndrome and toxic megacolon and even death if infected with Shigella dysenteriae I.

In the event of any possible or suspected case being reported prompt epidemiological investigation should be started to determine the source of infection and mode of transmission. If a common source (water or food) is detected appropriate measures should be taken.

**7.4.** **Case Classification**

**7.4.1.** **Suspected:** A case compatible with the surveillance case definition.

**7.4.2.** **Probable:** Not applicable.

**7.4.3.** **Confirmed: Bacillary Dysentery:** A suspected case in which the stools culture isolates a causative bacterial organism.

**7.4.4.** **Confirmed: Amoebic Dysentery:** Microscopic demonstration of trophozoites or cysts in stool samples collected from patients.

**7.5.** **Laboratory criteria for diagnosis:**
Stool culture and ABST for sensitivity pattern.

**7.6.** **Foot notes:**
Acute bloody diarrhoeas caused by bacteria (Shigella, E-coliO157:H7 and others) and other organisms (Amoeba) are categorized as Dysentery. The main health concerns of dysentery are intestinal damage, sepsis and malnutrition; other complications including dehydration also can occur.



# 8. Encephalitis

**8.1.** **ICD 10 Classification – G 04** (for further details refer ICD 10, Volume 1, WHO, 1992)

**8.2.** **Surveillance case definition**
A febrile illness of variable severity associated with neurological features ranging from headache to alteration of level of consciousness and signs and symptoms suggestive of meningitis and encephalitis. Symptoms can include: headache, fever, meningeal signs, seizures, stupor, disorientation, coma, tremors, paresis (generalized), hypertonia, loss of coordination.

**Foot Note:** *Lumbar Puncture to be carried out to exclude bacterial causes of meningitis.*

**8.3.** **Rationale for surveillance**
Encephalitis/Encephalitides is a group of inflammatory diseases involving parts of the brain and/or the spinal cord and meninges.

Japanese Encephalitis (JE) virus is the most common cause of viral encephalitis over a large part of East Asia. In recent decades outbreaks of JE have occurred in several previously non-endemic areas and the high fatality rate and frequent residual neuro-psychiatric, sequelae in survivors, make JE a considerable public health problem in Asian regions.

Situation in Sri Lanka – JE virus was first isolated in Sri Lanka in 1968 at the Medical Research Institute, Colombo. Since then JE cases have been identified from various parts of the country.

Sri Lanka adopted immunization against JE as a major strategy for the prevention and control of the disease in high risk areas in 1988. The target population is children between the ages of 1-10 years. This age group was selected considering the age distribution of patients' immunity levels and vaccine cost to achieve maximum long term results making the programme cost-effective. Since the introduction of JE immunization programme the incidence of disease in areas previously experienced outbreaks has come down. Surveillance of the disease is very important to assess the effectiveness of the control programmes. Encephalitis surveillance will also help us to monitor disease incidence in both previously endemic and non endemic areas which will assist in predicting impending outbreaks of JE.

**8.4.** **Case Classification**

**8.4.1.** **Suspected:** A case that is compatible with the surveillance case definition.

**8.4.2.** **Probable:** A suspected case with presumptive laboratory results.

**8.4.3.** **Confirmed:** A suspected case with confirmatory laboratory results.

**8.5. Laboratory criteria for diagnosis of Japanese Encephalitis**

**Presumptive:**

- Fourfold or greater rise in JE virus-specific IgG antibody in paired sera (acute and convalescent phases), ELISA, haemagglutination inhibition test **or** virus neutalization test, in a patient with no history of recent yellow fever vaccination and where cross-reactions to other flaviviruses have been excluded.
- JE virus specific IgM antibody in a single blood sample in late acute phase or early convalescence.

**Confirmatory:**

- JE virus-specific IgM antibody in the CSF by IgM capture ELISA **or**
- Detection of the JE virus, antigen or genome in brain, spinal cord by immunochemistry or immunofluorescence or PCR.

**Note:** Japanese Encephalitis infections are common and the majority are asymptomatic. JE infections may occur concurrently with other infections causing central nervous system symptoms.

**8.6. Foot notes**

Over a large part of East Asia, the Japanese Encephalitis virus is the most common cause of encephalitis. This mosquito-borne encephalitis has a potential for outbreaks and can be associated with a high case-fatality rate. Three strategies for control based on the natural transmission cycle of Japanese encephalitis have been proposed:

- Vector control
- Vaccination of swine (virus-amplifying host associated with human epidemic disease)
- `Vaccination of humans



# 9. Enteric Fever (Typhoid Fever)

**9.1. ICD 10 Classification – A 01** (for further details refer ICD 10, Volume 1, WHO, 1992)

**9.2. Surveillance case definition**

An illness often characterized by insidious onset of sustained fever, headache, malaise, anorexia, in children coated tongue, relative bradycardia, splenomegaly, constipation or diarrhea, nonproductive cough and may have a skin rash.

**9.3. Rationale for surveillance**

Enteric fever is a bacterial disease which can cause complications such as intestinal haemorrhage and perforation in about 1% of cases. It also can be fatal if not treated with antibiotics. The fact that around 2-5% of untreated patients becoming chronic carriers is also a reason for surveillance. Surveillance and intensive search for case or the carrier who is the source of infection is of much importance in reducing the disease burden due to Salmonella infections.

Drug resistant strains of Salmonella have been reported in other countries in Asia as well as in other countries. Data on cultures and antibiotic sensitivity patterns should be collected whenever possible as a part of surveillance.

**9.4. Case Classification**

**9.4.1. Suspected:** A patient compatible with the surveillance case definition.

**9.4.2. Probable:** A suspected case which is epidemiologically linked to a confirmed case in an outbreak.

**9.4.3. Confirmed:** A suspected case which is laboratory confirmed.

**9.5. Laboratory criteria for diagnosis:**

Typhord fever – Isolation of *Salmonella typhi* from blood, stool or other clinical specimen.

- Serological tests based on agglutination antibodies (SAT) are of little diagnostic value because of limited sensitivity and specificity. However the demonstration of a four fold rise in antibody titre is confirmatory of salmonella infection.

**9.6. Foot notes:**

Paratyphoid fever caused by *Salmonella paratyphi* presents a similar picture.

# 10. Food Poisoning

**10.1. ICD 10 Classification –** A02, A 05, T61, T 62 (for further details refer ICD 10, Volume 1, WHO, 1992)

**10.2. Surveillance case definition**

An acute gastroenteritis in a person linked to an ingested food or liquid: or an outbreak of acute gastroenteritis in two or more persons linked by common exposure to a food or liquid ingested.

**10.3. Rationale for surveillance**

A foodborne disease is a disease, usually either infectious or toxic in nature, caused by agents or their toxins that enter the body through ingestion of food or drinking-water. In addition to foodborne diseases mentioned in the manual (cholera, hepatitis A, shigellosis, salmonellosis), other foodborne diseases can also be the object of surveillance, which helps to determine the magnitude and trend of foodborne diseases and to monitor and evaluate food safety. Surveillance is also needed for early detection and control of outbreaks and identification of risk factors.

Through prompt investigation of reported cases to determine time and place of exposure, population at risk and a listing of food and liquids consumed coupled with prominent clinical features and estimated incubation period will give useful lead to most probable causative agent.

**10.4. Case Classification**

**10.4.1. Suspected:** A case that meets the surveillance case definition.

**10.4.2. Probable:** Not applicable

**10.4.3. Confirmed:** A suspected case in which laboratory investigation confirms the presence of one or more foodborne pathogens or toxins in a clinical specimen.

**10.5. Laboratory criteria for diagnosis:**

- Isolation of certain food borne organism (e.g. Salmonella) or toxins from relevant clinical samples.
- Isolation of suspected organism in sufficient quantities from incriminated food samples or detection of toxins from food samples.

**10.6. Foot notes:**

Conditions frequently referred to as food poisoning are foodborne diseases, including foodborne intoxications and foodborne infections which are illnesses acquired through consumption of contaminated food or water.



# 11. Human Rabies

**11.1. ICD 10 Classification – A 82** (for further details refer ICD 10, Volume 1, WHO, 1992)

**11.2. Surveillance case definition**

An acute neurological syndrome (enchephalomyalitis) characterized by forms of hyperactivity in the majority of subjects (furious rabies) or paralytic syndromes seen less often (dumb rabies) which progresses towards coma and death usually by respiratory failure, within 10 to 14 days after developing the first symptom, if no intensive care is instituted. An exposure could be bites, scratches, contamination of mucous membranes or contamination of an open wound with saliva from a suspected rabid animal which usually should be obtained from the patient's medical history. The incubation period may vary from less than 1 week to more than 1 year, but usually falls between 30-90 days.

**11.3. Rationale for surveillance**

Rabies is a fatal zoonotic viral disease, transmitted to humans through contact (mainly bites and scratches) with infected animals both domestic and wild. Less than 100 human deaths are estimated to occur each year in Sri Lanka due to human rabies. An estimated 200,000 people receive post-exposure treatment after being exposed to animals suspected of having rabies.

Surveillance of both human and animal rabies is essential to detect high-risk areas and implement control activities.

**11.4. Case Classification**

**11.4.1. Suspected:** A case that is compatible with the surveillance case definition.

**11.4.2. Probable:** A suspected case with a history of contact with suspected rabid animal.

**11.4.2. Confirmed:** A suspected case that is laboratory-confirmed.

**11.5. Laboratory criteria for diagnosis**

One or more of the following:

- Detection of rabies viral antigens by direct fluorescent antibody (FA) in clinical specimens, preferably brain tissue (collected at post mortem)
- Detection by FA on skin or corneal smear (collected ante mortem)
- FA positive after inoculation of brain tissue, saliva or CSF in cell culture, or in mice by intracerebral inoculation
- Detectable rabies-neutralizing antibody titre in the CSF of an unvaccinated person
- Identification of viral antigens by PCR on fixed tissue collected post mortem or in a clinical specimen (brain tissue or skin, cornea or saliva)
- Isolation of rabies virus from clinical specimens and confirmation of rabies viral antigens by direct fluorescent antibody FA testing

**11. 6. Foot notes:**
Prevention and Control Strategies recommended:

1. Post exposure treatment following proper case assessment.
2. Streamlining Dog ownership, Dog registration and dog population control.
3. Routine vaccination of household pets e.g. dogs, cats.
4. Control of the stray dog population humanely.



# 12. Leptospirosis

**12.1. ICD 10 Classification – A 27** (for further details refer ICD 10, Volume 1, WHO, 1992)

**12.2. Surveillance case definition**
Acute febrile illness with headache, myalgia and prostration associated with any of the following symptoms:

- conjunctival suffusion / conjunctival haemorrhage
- meningeal irritation
- anuria or oliguria / proteinuria / haematuria
- jaundice
- haemorrhages (from the intestines; lung bleeding is notorious in some areas), purpuric skin rash
- cardiac arrhythmia or failure

**and**

- a history of exposure to infected animals

**or**

- an environment contaminated with animal urine; commonly as an occupational hazard.

Other common symptoms include nausea, vomiting, abdominal pain, diarrhoea, arthralgia.

**12.3. Rationale for surveillance**
This zoonosis with worldwide distribution occurs seasonally in countries with a humid subtropical or tropical climate. It is often linked to occupation; working in paddy fields, irrigation, livestock, canal and sewer workers. Feral and domestic animal species may serve as sources of infection with one of the *Leptospira* serovars. Infection is transmitted to humans through direct contact with (the urine of) infected animals or a urine-contaminated environment, mainly surface waters, soil and plants. The course of disease in humans ranges from mild to lethal.

In Sri Lanka leptospirosis is a notifiable disease. Leptospirosis is endemic in both rural and urban areas of Sri Lanka. Surveillance remains as one of the key strategies in disease control, particularly in early prediction and preventing outbreaks. Sentinel site based special surveillance in high risk areas is carried out since 2004. Geographical Information System (GIS) will be a useful tool in future surveillance.

**12.4. Case Classification**

**12.4.1. Suspected:** A case that is compatible with the surveillance case definition.

**12.4.2. Probable:** Not Applicable

**12.4.3. Confirmed:** A suspected case that is confirmed in a competent laboratory.

**12.5. Laboratory criteria for diagnosis:**

- Direct microscopy (dark ground) of blood and urine
- Isolation from blood or other clinical materials through culture of pathogenic leptospirosis
- Positive serology, preferably Microscopic Agglutination Test (MAT), using a range of *Leptospira* strains for antigens that should be representative of local strains or using a non pathogenic leptospira strain to detect genus specific antibodies with a 4 fold rise.



# 13. Malaria

**13.1. ICD 10 Classification – B 50 - 54** (for further details refer ICD 10, Volume 1, WHO, 1992)

**13.2. Surveillance case definition (Uncomplicated Malaria)**

A patient residing in malaria endemic area or having a history of visiting a malaria endemic area, presenting with fever or history of fever with chills & rigors and headache. ( Non specific symptoms otherwise unexplained, includes – Myalgia, backache and joint pain)

**13.3. Rationale for surveillance**

Malaria is the most highly prevalent tropical disease, with high morbidity and mortality and high economic and social impact. The *Global Strategy for Malaria Control* has 4 elements:

1. Provision of early diagnosis and treatment.
2. Planning and implementing selective and sustainable preventive measures, including vector control.
3. Early detection, containment and prevention of epidemics.
4. Strengthening local capacities in basic and applied research to permit and promote the regular assessment of a country's malaria situation, in particular the ecological, social and economic determinants of the disease.

For this, surveillance is essential.

**13.4. Case Classification**

**13.4.1. Suspected:** A case compatible with the surveillance case definition.

**13.4.2. Probable:** Not applicable

**13.4.3. Confirmed:** An episode of microscopically confirmed or antigen positive (Rapid Detection Test) malaria parasitaemia in any person.

**13.5. Laboratory criteria for diagnosis**

Demonstration of malaria parasites in blood films (mainly asexual forms) by Microscopy or Antigen detection by Rapid Detection Test.

# 14. Measles

**14.1. ICD 10 Classification – B 05** (for further details refer ICD 10, Volume 1, WHO, 1992)

**14.2. Surveillance case definition**

Any person with:

- Fever

**and**

- Maculopapular (i.e. non-vesicular) rash

**and at least one of the following:**

- Cough
- Coryza (i.e. runny nose)
- Conjunctivitis (i.e. red eyes)

**14. 3. Rationale for surveillance**

Countries in the initial "measles control" phase where measles is endemic should concentrate on raising routine measles immunization coverage and on focussing extra immunization efforts in areas with high measles morbidity.

Sri Lanka is in the more advanced "measles outbreak prevention phase" and is achieving high routine measles coverage and low incidence, with periodic outbreaks. Therefore, surveillance must be used to predict potential outbreaks and identify high-risk areas and populations.

With the completion of the 2nd phase of the measles catch-up campaign in 2004 Sri Lanka will be moving into the final and most advanced elimination phase where the objective is to completely interrupt measles transmission. It requires very intensive case-based surveillance to detect, investigate, and laboratorily confirm each and every case of suspected measles in the community.

**14.4. Case Classification**

**14.4.1. Suspected:** A case compatible with the surveillance case definition

**14.4.2. Probable:** Not applicable.

**14.4.3. Confirmed:** A suspected case that is laboratory-confirmed or linked epidemiologically to a laboratory-confirmed case.

**14.5. Laboratory criteria for diagnosis**

- Detection of measles specific IgM antibodies in blood collected within 3-28 days of onset of rash
- Isolation of measles virus from urine, naso-pharyngeal aspirates or peripheral blood lymphocytes during the prodrome or rash stages of the disease

**14.6. Footnotes**

A sample of blood should be collected from every suspected case of measles for laboratory confirmation. 5 ml of blood should be collected within 3-28 days of onset of rash, serum separated and sent within 5 days of collection to the MRI, Colombo requesting for virus isolation or detection of measles specific IgM antibodies.



# 15. Meningitis

**15.1. ICD 10 Classification –G00, A87** (for further details refer ICD 10, Volume 1, WHO, 1992)

**15.2. Surveillance case definition:**

Fever of acute onset with one or more of the following signs of meningeal irritation/inflammation.

- Neck stiffness
- Poor sucking (in infants)
- Bulging fontanells (in infants)
- Altered consciousness
- Irritability
- Seizures
- Other signs of meningeal irritation/ inflammation

**15.3. Rationale for surveillance:**

**Bacterial Meningitis (ICD 10 - G00):**

The causative agent varies by the age group. *Neisseria meningitidis, Streptococcus pneumoniae* and *Haemophilus influenzae* type b constitute most of the cases. These 3 organisms are responsible for almost 75% of all meningitis case and 90% of bacterial meningitis in children.

**Viral Meningitis (ICD 10 – A87):**

A wide variety of infectious agents cause aseptic meningitis. Viral meningitis can occur as epidemics or as sporadic cases. Under optimal conditions specific identification of causative agent is possible through serological and isolation techniques.

Meningitis was made a notifiable disease in 2005. Meningitis surveillance data is important not only to understand the epidemiology and burden of disease but also as a tool in directing future strategies of disease prevention and control.

Resistance to commonly used antibiotics to treat meningitis, among meningitis causing bacteria has been recorded in many countries. Therefore collection of antibiotic sensitivity data is also important to understand Sri Lankan situation.

**15.4. Case Classification:**

**15.4.1. Suspected:** A case compatible with the surveillance case definition.

**15.4.2. Probable Bacterial Meningitis:** A suspected case with a turbid ("cloudy") CSF or a CSF with an elevated protein (>100 mg/dl) decreased glucose (<40mg/dl) as compared to the blood glucose level or leucocytosis (>100 WBC/$mm^3$) with 80% neutrophils.

**Probable Viral Meningitis:** A suspected case with CSF findings including pleocytosis (usually mononuclear, occasionally polymorphonuclear in the early stages), increased protein, normal sugar and absence of other causative organisms.

**15.4.3. Confirmed:** A suspected or probable case which is laboratory confirmed.

**15.5. Laboratory criteria for diagnosis:**
Culture: Isolation of a causal organism by culturing CSF and/or blood.

Antigen Detection: Demonstration of an antigen of a causal organism by methods such as latex agglutination or counter-immunoelectrophoresis, in CSF and/or blood.



# 16. Mumps (Infectious Parotitis)

**16.1. ICD 10 Classification – B 26** (for further details refer ICD 10, Volume 1, WHO, 1992)

**16.2. Surveillance case definition**
An illness with acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland, lasting more than or equal to 2 days, and without other apparent cause.

**16.3. Rationale for surveillance**
Infection with mumps virus can lead to acute complications such as aseptic meningitis, orchitis, pancreatitis and long term irreversible nerve deafness.

Currently incidence data on mumps is not available for Sri Lanka. To control and prevent mumps it is important to continue surveillance activities to understand the epidemiology of the disease in Sri Lanka. The national advisory committee on communicable diseases has therefore recommended enhanced surveillance of mumps. Mumps was made a notifiable disease from the year 2005.

**16.4. Case Classification**

**16.4.1 Suspected:** A case compatible with the surveillance case definition.

**16.4.2 Probable:** Not applicable.

**16.4.3 Confirmed:** A suspected case positive for Mumps specific IgM antibody.

**16.5. Laboratory criteria for diagnosis**
Demonstration of mumps specific IgM antibody in a single serum sample.

**16.6. Foot notes:**
The infectious agent for Mumps is the Mumps virus which is a member of the family Paramixoviridae.

# 17. Plague

**17.1. ICD 10 Classification – A 20** (for further details refer ICD 10, Volume 1, WHO, 1992)

**17.2. Surveillance case definition**

A disease characterized by rapid onset of fever, chills, headache, severe malaise, prostration, with ***bubonic form****- extreme painful swelling of lymph nodes (buboes) in axilla or groin, ***pneumonic form****- cough with blood-stained sputum, chest pain, difficulty in breathing

*Both forms can progress to septicaemic form with toxaemia; characterized by disseminated intravascular coagulation, hypotension and cardiac failure.

**17.3. Rationale for surveillance**

Disease is endemic in many countries and often has an epidemic potential. Plague is an infection of wild rodents (eg: field mice, gerbils, moles, skunks and others) which can spread to domestic rodents (eg: rats) and other animals such as cats and to humans. Plague is transmitted to humans through infected flea bites or by direct exposure to respiratory droplets or infected animal tissues. Surveillance of human and animal disease (dead rats are predictive of disease in endemic areas) is important to predict and detect epidemics and to monitor control measures.

**Case report universally required by International Health Regulations.**

**17.4. Case Classification**

**17.4.1 Suspected:** A case compatible with the surveillance case definition. May or may not be supported by laboratory finding of Gram negative bipolar coccobaccili in clinical material (bubo aspirate, sputum, tissue, blood) **.**

**17.4.2 Probable:** A suspected case **with**

- Positive direct fluorescent antibody (FA) test for *Y. pestis* in clinical specimen **or**
- Passive haemagglutination test, with antibody titre of at least 1:10, specific for the F1 antigen of *Y.pestis* as determined by the haemagglutination inhibition test (HI) **or**
- Epidemiological link with a confirmed case.

**17.4.3 Confirmed:** A suspected or probable case that is laboratory-confirmed.

**17.5. Laboratory criteria for diagnosis**

- Isolation of *Yersinia pestis* in cultures from buboes, blood, CSF or sputum **or**
- Passive haemagglutination (PHA) test, demonstrating an at least fourfold rise in antibody titre, specific for F1 antigen of *Y. pestis*, as determined by the haemagglutination inhibition test (HI) in paired sera.



# 18. Rubella

**18.1. ICD 10 Classification – B 06** (for further details refer ICD 10, Volume 1, WHO, 1992)

**18.2. Surveillance case definition**

An illness that has following characteristics:

Acute onset of generalized maculopapular rash

Temperature greater than $99.0^0$F (higher than $37.2^0$C),

Arthralgia/arthritis, lymphadenopathy (Usually suboccupational, postauricular and cervical) or conjunctivitis

**18.3. Rationale for surveillance:**

Aimed at reduction of morbidity and complications due to maternal infection with rubella virus. Rubella in pregnancy cause severe congenital malformations in the offspring (Congenital Rubella Syndrome).

**18.4. Case Classification**

**18.4.1 Suspected:** A patient who is compatible with the surveillance case definition.

**18.4.2 Probable:** A case that meets the surveillance case definition and has no or non-contributory serologic or virologic testing and is not epidemiologically linked to a laboratory confirmed case.

**18.4.3 Confirmed:** A suspected case with a positive blood test for rubella specific IgM or that meets the clinical case definition and is epidemiologically linked to a laboratory confirmed case.

**18.5. Laboratory criteria for diagnosis:**

- Detection of Rubella specific IgM in blood specimen obtained within 28 days of onset of the rash.
- Either seroconversion or four fold rise of IgG antibody between acute and convalescence samples.

# 19. Congenital Rubella Syndrome (CRS)

**19.1. ICD 10 Classification – P 35** (for further details refer ICD 10, Volume 1, WHO, 1992)

**19.2. Surveillance case definition**

An illness usually manifesting in infancy resulting from rubella infection in utero and characterized by signs or symptoms from the following categories*:

1. Cataracts/congenital glaucoma, pigmentary retinopathy
2. congenital heart disease (most commonly patent ductus arteriosus, or peripheral pulmonary artery stenosis)
3. loss of hearing,
4. purpura, splenomegaly, jaundice
5. meningoencephalitis, microcephaly, mental retardation
6. radiolucent bone disease.

**or**

laboratory data consistent with congenital rubella infection

**Some Children may have only one symptom*

**19.3. Rationale for surveillance:**

Rubella and Congenital Rubella Syndrome (CRS) were made notifiable diseases since 1996. Epidemiological data on CRS is limited and some data is available in indoor mortality morbidity return sent to the medical statistician by the medical institutions. Based on the available data the advisory committee on communicable diseases made a decision to introduce rubella vaccination into the national immunization programme. The main objective of the programme is the prevention of CRS. Surveillance for Rubella and CRS should lead to prompt reporting of suspected and confirmed cases.

**19.4. Case Classification**

**19.4.1 Suspected:** Any infant less than one year of age in whom a health worker suspects CRS. A health worker should suspect CRS when an infant presents with heart disease and/or suspicion of deafness and/or one or more of the following eye signs: white pupil (cataract), diminished vision, pendular movement of the eyes (nystagmus), squint, smaller eye ball (microphthalmos) or larger eye ball (congenital glaucoma). A health worker should also suspect CRS if an infant's mother has a history of suspected or confirmed rubella during pregnancy even when the infant shows no signs of CRS.

**19.4.2 Probable:** A case that is not laboratory confirmed and that has any two findings listed in paragraph 19.2.

**19.4.3 Confirmed:** An infant with clinically suspected CRS who have a positive blood test for rubella specific IgM.



**19.5. Laboratory criteria for diagnosis:**

- Demonstration of a rubella specific IgM antibody in the infant.
  - o Almost all infants with CRS will have a positive rubella specific IgM in the 1st 6 months of life and 50-60% will be positive during the 2nd 6 months of life.
- Demonstration of a significant rise in Rubella specific IgG antibody in the infant during follow up or IgG rubella antibody level that persists at a higher level and for a longer time period than expected from positive transfer of maternal antibody (Maternal IgG antibody persists up to six months of age and then gradually disappears).

# 20. Severe Acute Respiratory Syndrome (SARS)

**20.1.** ICD 10 classification – Not classified in ICD 10.

**20.2. Surveillance case definition**

A person with a history of:

Fever (≥ 38°C)

**and**

One or more symptoms of lower respiratory tract illness (cough, difficulty in breathing, shortness of breath).

**and**

Radiographic evidence of lung infiltrates consistent with pneumonia or Respiratory Distress Syndrome (RDS).

**or**

autopsy findings consistent with the pathology of pneumonia or RDS without an identifiable cause.

**and**

No alternative diagnosis can fully explain the illness.

**and**

History of visit to an affected area or close contact with a patient suspected to have SARS; within 10 days of the onset of the illness

**20.3. Rationale for surveillance**

Transmission of SARS appears to occur predominantly through close interactions with infected persons. Infectious respiratory secretions are the most likely source of infection, although fecal/oral transmission may have occurred in some settings. Contact with contaminated body substances, either directly (e.g. shaking hands) or indirectly (e.g., touching objects contaminated with respiratory secretions or stool), can lead to exposure. SARS may also be transmitted through close contact with respiratory droplets expelled when a patient coughs or sneezes. In some instances, however, true airborne transmission (i.e., via droplet nuclei) cannot be excluded as a possible mode of SARS transmission.

SARS has been transmitted in healthcare settings (e.g., inpatient settings, emergency departments, nursing homes) to and from patients, healthcare workers, and visitors. Transmission to healthcare workers has occurred primarily after close contact with symptomatic persons before implementation of infection control precautions. During the 2003 outbreaks, multiple hospitals reported cases of SARS disease among healthcare workers who were present during aerosol-generating procedures performed on patients with SARS disease, suggesting that aerosol-generating procedures may pose an increased



risk of SARS transmission. Special precautions during these procedures are recommended.

Infection control guidance to prevent SARS transmission is necessary to help ensure the protection of healthcare workers and healthcare facilities. In addition, as hospitalization of patients with SARS disease is recommended only if medically indicated, patients with less severe disease will likely be isolated in personal residences and designated community facilities. Therefore, appropriate infection control measures will be required to prevent transmission of SARS in these facilities. The goals for all settings are to:

- Ensure early recognition of patients at risk for SARS disease.
- Prevent transmission of SARS by implementing appropriate infection control precautions.

**20.4. Case Classification**

**20.4.1 Suspected:**

- A person presenting with a history of: - high fever (>38°C)

  and

  - cough or breathing difficulty

  and

  One or more of the following exposures during the 10 days prior to onset of symptoms:

  - **Close contact** with a person who is a suspect or probable case of SARS;
  - History of travel, to an area with recent local transmission of SARS
  - Residing in an area with recent local transmission of SARS.

- A person with an unexplained acute respiratory illness resulting in death on whom no autopsy has been performed.

  and

  One or more of the following exposures during the 10 days prior to onset of symptoms:

  - Close contact with a person who is a suspect or probable case of SARS;
  - History of travel, to an area with recent local transmission of SARS
  - Residing in an area with recent local transmission of SARS.

**20.4.2 Probable:**

1. A suspect case with radiographic evidence of infiltrates consistent with pneumonia or respiratory distress syndrome (RDS) on chest X-ray (CXR).

2. A suspect case of SARS that is positive for SARS coronavirus by one or more assays. See use of laboratory methods for SARS diagnosis.

3. A suspect case with autopsy findings consistent with the pathology of RDS without an identifiable cause.

**20.4.3 Confirmed:** A person with symptoms and signs that are clinically suggestive of SARS AND with positive laboratory findings for SARS following precise diagnostic criteria. Testing should only be undertaken in a national or regional reference laboratory as per WHO recommendations.

**20.5 Laboratory criteria for diagnosis:**
Isolation of SARS virus from nasopharyngeal aspirate, blood or stools.

Detection of rising titres of SARS viral antibody between acute and convalescence samples.



# 21. Simple Continued Fever of 7 days or more

**21.1.** ICD 10 classification: Not classified in the ICD 10

**21.2. Surveillance case definition**
A febrile illness lasting 7 days or more where no cause is found even after seven days provided basic investigations have been carried out.

**21.3. Rationale for surveillance:**
In instances where a febrile illness cannot be aetiologically confirmed, and the fever lasts over 7 days, the need to identify an infectious agent becomes more and more important. Surveillance of continued fever is important to establish or rule out an infectious agent. The patient also should be under observation until recovery. The natural history of the illness will help in the understanding and establishing of epidemiological and aetiological attributes of the diseases.

**21.4. Case Classification**

**21.4.1 Suspected:** Not applicable.

**21.4.2 Probable:** Not applicable.

**21.4.3 Confirmed:** Not applicable.

**21.5 Laboratory criteria for diagnosis:** Not applicable.

# 22. Tetanus

**22.1. ICD 10 Classification – A 35, A 34** (for further details refer ICD 10, Volume 1, WHO, 1992)

**22.2. Surveillance case definition**

Clinical picture compatible with Tetanus: Acute onset of hypertonia and/or painful muscular contractions (usually of the muscles of the jaw and neck) and generalized muscle spasms without other apparent medical cause.

**22.3. Rationale for surveillance**

Organized immunization programmes against childhood diseases commenced with the introduction of DPT in 1961 and instructions for immunization of pregnant women with Tetanus Toxoid were issued in 1969. Tetanus was made a notifiable disease in 1971. With the launch of EPI programme in 1978, incidence of adult tetanus as well as neonatal tetanus started to decline steadily and achieved neonatal tetanus elimination status in the late eighties. With the achievement of very high coverage for five doses of TT with 4 doses of DPT , a dose of DT and the introduction of the sixth booster dose of tetanus toxiod with aTd vaccine at the age of school leaving and wide use of TT in all medical institutions for post exposure vaccination, it is not an impossibility to eliminate adult tetanus as well . Therefore to achieve and to maintain such elimination status, timely and accurate surveillance data is very important.

**22.4. Case Classification**

**22.4.1 Suspected:** A case compatible with surveillance case definition.

**22.4.2 Probable:** Not Applicable.

**22.4.3 Confirmed**: A suspected case as per above surveillance case definition.

**22.5. Laboratory criteria for diagnosis**

Diagnosis is mainly dependant on the clinical criteria.

Detection of tetanus toxoid antibody in an unvaccinated and untreated patient and demonstration of a specific tetanus toxoid antibody response in a laboratory where appropriate laboratory facilities are available.



# 23. Neonatal Tetanus

**23.1. ICD 10 Classification – A 33** (for further details refer ICD 10, Volume 1, WHO, 1992)

**23.2. Surveillance case definition**

Any neonatal death between 3–28 days of age in which the cause of death is unknown.

**or**

Any neonate reported as having suffered from neonatal tetanus between 3–28 days of age and not investigated.

**23.3. Rationale for surveillance**

The strategy to prevent neonatal tetanus by immunization of pregnant women with Tetanus Toxoid was started in 1969. With the launching of EPI in 1978, coverage of pregnant women against tetanus increased gradually and Sri Lanka achieved elimination status of neonatal tetanus in late eighties and maintain that status up to now. Effective surveillance is critical for maintenance of this elimination status to identify areas of populations at high risk for neonatal tetanus (NT) and to monitor the impact of availability of clean delivery services with routine immunization against TT.

**23.4. Case Classification**

**23.4.1 Suspected:** Any neonatal death between 3-28 days of age in which the cause of death is unknown; or any neonate reported as having suffered from neonatal tetanus between 3-28 days of age and not investigated.

**23.4.2 Probable:** Not Applicable.

**23.4.3 Confirmed:** Any neonate with a normal ability to suck and cry during the first two days of life, and who between 3 and 28 days of age cannot suck normally, and become stiff or has convulsions (i.e. jerking of the muscles) or both.

Hospital-reported cases of neonatal tetanus are considered confirmed.

**23.5. Laboratory criteria for diagnosis**

The diagnosis is purely on clinical manifestations and does not depend upon laboratory or serological confirmation.

# 24. Tuberculosis (Pulmonary)

**24.1. ICD 10 Classification – A 15 – A 19** (for further details refer ICD 10, Volume 1, WHO, 1992)

**24.2. Surveillance case definition**

Any person presenting with signs and symptoms suggestive of tuberculosis particularly cough of three weeks duration or more.

**Symptoms suggestive of Tuberculosis.**

- Haemoptysis
- Shortness of Breath
- Fever and night sweats
- Loss of appetite
- Loss of weight
- Tiredness

**24.3. Rationale for surveillance**

About one-third of the world's population is infected by *Mycobacterium tuberculosis*. Between 7 and 8.8 Million new cases are estimated to occur each year, 95% in developing countries. About 3.3 Million cases of tuberculosis are notified each year. Projections into the next century suggest that the impact of tuberculosis (TB) will increase if adequate control is not established immediately in all countries.

The overall objective of tuberculosis control is to reduce morbidity, mortality and transmission of the disease until it no longer poses a threat to public health and to prevent emergence of Multi Drug Resistant Tuberculosis (MDRTB).To achieve this objective, the 1991 World Health Assembly endorsed the following targets for global tuberculosis control:

- Successful treatment for 85% of the detected new smear-positive cases.
- Detection for 70% of smear-positive cases by year 2005.

Surveillance of tuberculosis helps to monitor the course of the tuberculosis epidemic, and patient cohort analysis is used to evaluate treatment outcomes.

**24.4. Case Classification**

**24.4.1 Suspected:** Any person who presents with symptoms and signs suggestive of TB, in particular cough of long (more than 3 weeks) duration.

**24.4.2 Probable:** Not applicable.

**24.4.3 Confirmed:** A patient in whom TB has been microscopically confirmed. A patient with positive culture for the *Micobacterium tuberculosis* complex. (Or when culture is not routinely available, a patient with two sputum specimens positive for acid fast bacilli.).

**24.5. Laboratory criteria for diagnosis:**

**Smear positive patient:**

1. Two sputum smears are positive for Acid Fast Bacilli (AFB).
2. One sputum smear positive for AFB and radiological abnormalities consistent with active pulmonary tuberculosis.
3. One sputum smear positive for AFB and culture positive for *Mycobacterium tuberculosis*.

**Smear negative patient:**

- culture positive for *Mycobacterium tuberculosis*.



# 25. Typhus Fever

**25.1. ICD 10 Classification – A 75** (for further details refer ICD 10, Volume 1, WHO, 1992)

**25. 2. Surveillance case definition**

An acute febrile illness associated with an eschar, head ache, macular popular skin rash conjunctival injection, lymphadenopathy and profuse sweating and cough. Defervescence within 48 hours following Tetracycline therapy strongly suggestive of Rickettsial infection.

- Eschar may or may not be present
- History of tick bite or travel to scrub areas
- Rash may be overlooked in patients with dark skin

**25.3. Rationale for surveillance**

Scrub typhus (mite-borne typhus, Tsutsugamushi disease) is an acute infectious disease that is emerging and re-emerging in South-East Asia and the south-western Pacific region. It can have a case-fatality rate of up to 30% if untreated. Epidemics occur when susceptible individuals are brought into endemic areas (e.g. during military operations). In some countries (e.g. Japan) it is a notifiable disease. Multi-drug resistance has been documented in Thailand.

Surveillance is essential to a better understanding of the epidemiology of the disease and to the detection of outbreaks. Training in diagnostic techniques is often required.

**25.4. Case Classification**

**25.4.1 Suspected:**

A case that is compatible with the surveillance case definition and rapid response to antibiotics.

**25.4.2 Probable:** Not Applicable.

**25.4.3 Confirmed:** A suspected case with laboratory confirmation.

**Note:** Serological tests are complicated by the antigenic differences between various strains of the causal agent.

**25.5. Laboratory criteria for diagnosis:**

Demonstration of a four fold rise in antibody titre by Weil-Felix test or IF test.

- The Weil-Felix test is less specific and less sensitive than the IF test. The Weil-Felix test is currently available at the Medial Research Institute and the IF test will be available in the future.

# 26. Viral Hepatitis

**26.1. ICD 10 Classification – B 15 – B 19** (for further details refer ICD 10, Volume 1, WHO, 1992)

**26.2. Surveillance case definition**

Acute illness including acute jaundice, dark urine, anorexia, malaise, extreme fatigue, and right upper quadrant tenderness.

**26.3. Rationale for surveillance**

Several distinct infections are grouped as viral hepatitis, namely A, B, C, D (delta hepatitis) and E. They have similar clinical presentations, but differ in etiology and in some epidemiological, immunological, clinical and pathological characteristics. Hepatitis D can occur as a superinfection or co-infection with hepatitis B. Their prevention and control vary greatly.

Transmission is mainly faeco-oral for hepatitis A and E, parenteral for hepatitis B, C and D and sexual and vertical for hepatitis B and C. The course of disease may be varied; acute, chronic sequelae (hepatitis B, C and D) or fulminating (hepatitis E in pregnancy).

Prevention of hepatitis A and E is based on food and water sanitation. Safe injection and transfusion practices and safe sexual practices are important in preventing hepatitis B, C and D. In Sri Lanka hepatitis B vaccination is included in the national EPI programme and for high-risk groups such as health staff.

Viral hepatitis is a notifiable disease in Sri Lanka. Hepatitis A is the prevailing type among the reported cases and endemic in many parts of the country. Special surveillance using a special investigation form is in practice and the objectives are to study disease epidemiology, to forecast and prevent outbreaks and thereby control viral hepatitis in the country. It is recommended to investigate all outbreaks as a routine procedure. Routine screening for hepatitis B and C in blood transfusion is mandatory.

**26. 4. Case Classification**

**26.4.1. Suspected:** A case that is compatible with the surveillance case definition.

**26.4.2. Probable:** Not applicable.

**26.4.3. Confirmed:**

**26.4.3.1.** Hepatitis A: A suspected case that is laboratory confirmed for *hepatitis A* only, or a case compatible with the clinical description, in a person who has an epidemiological link with a laboratory confirmed case of hepatitis A.

**26.4.3.2.** Hepatitis B: A suspected case who is laboratory confirmed.

**26. 5. Laboratory criteria for diagnosis**

Hepatitis A: Demonstration of Hepatitis A IgM Antibody in a serum sample.

Hepatitis B: Demonstration of Hepatitis B surface antigen (HBsAg) **or** HBc antigen IgM in a serum sample.



**Note 1**: The anti-HBc IgM test, specific for acute infection, is not available in most countries. HBsAg, often available, cannot distinguish between acute new infections and exacerbations of chronic hepatitis B, although continued HBsAg seropositivity (>6 months) is an indicator of carrier stage.

**Note 2:** For patients negative for hepatitis A or B, further testing for a diagnosis of acute hepatitis C, D, or E is recommended.

Hepatitis C: anti-HCV positivity in a previously negative person (seroconversion)

Hepatitis D: Anti-HDV positive HBsAg positive or IgM anti-HBc positive (only as co-infection or super-infection of hepatitis B)

Hepatitis E: IgM anti-HEV positive

**26.6. Foot notes:** Anti HBc IgM is rarely positive in chronic HBV infection.

# 27. Pertussis / Whooping Cough

**27.1. ICD 10 Classification – A 37** (for further details refer ICD 10, Volume 1, WHO, 1992)

**27.2. Surveillance case definition**

A person with a paroxymal cough* with at least one of the following**:

- inspiratory 'whooping'
- post-tussive vomiting (i.e. vomiting immediately after coughing)
- Subconjuctival hemorrhage

without other apparent cause

**In older children if cough lasts more than two weeks*

***In neonates apnoeic attacks may be present*

**27.3. Rationale for surveillance**

In Sri Lanka Immunization of children against pertussis commenced in 1961 with the introduction of DPT vaccine to the National Immunization Programme. With the current immunization schedule children receive 4 doses of whole cell pertussis vaccine as DPT on the completion of 2, 4, 6 and 18 months respectively. Before the launching of the EPI, an average of 1500 to 2000 cases of pertussis discharges were reported from government hospitals. With the increasing DPT immunization coverage, number of pertussis cases reported has come down to an average of less than 200 cases per year and maintained at static levels with periodic small outbreaks. However, the important drawback in pertussis surveillance and control is that none of the above cases are laboratory confirmed.

After taking into account the above, further strengthening of disease surveillance, especially the laboratory surveillance is necessary to detect and understand the changes in the Epidemiology of pertussis and its transmission to take appropriate control measures.

**27.4. Case Classification**

**27.4.1 Suspected:** A case that is compatible with the surveillance case definition.

**27.4.2 Probable:** Not applicable.

**27.4.3 Confirmed:** A suspected case that is laboratory-confirmed.

**27. 5. Laboratory criteria for diagnosis**

Isolation of *Bordetella pertussis* or *Bordatella parapertussis*

Detection of genomic sequences by polymerase chain reaction (PCR).



# 28. Yellow Fever

**28.1. ICD 10 Classification – A 95** (for further details refer ICD 10, Volume 1, WHO, 1992)

**28.2. Surveillance case definition**

A disease characterized by acute onset of fever followed by jaundice within 2 weeks of onset of first symptoms. Haemorrhagic manifestations and signs of renal failure may occur.

And a history of travel to a Yellow fever affected area within the last six days (longest incubation period for yellow fever)

**28.3. Rationale for surveillance**

This mosquito-borne virus disease occurs in tropical regions of Africa and South America and is maintained by sylvatic transmission of virus involving forest-dwelling mosquitoes and monkeys. Transmission to humans may occur in forest transition zones and may subsequently enter an urban cycle through *Aedes aegypti*. Many cities are now threatened with epidemics as yellow fever is undergoing a major resurgence especially in the African region. Surveillance data allow for monitoring disease incidence, prediction and early detection of outbreaks and monitoring of control measures.

Strategies for yellow fever control include control of *Aedes aegypti* in urban centres, infant immunization, vaccination campaigns, outbreak prevention, epidemic detection and control.

**Case reporting is universally required by International Health Regulations.**

**28.4. Case Classification**

**28.4.1 Suspected:** A case that is compatible with the surveillance case definition.

**28.4.2 Probable:** A suspected case with supportive serology (stable elevated antibody titre for yellow fever virus (≥ 32 complement fixation, ≥256 by immunofluracesnce assay, ≥320 by Haemoagglutination, ≥160 by neutralization or a positive serologic result by immunoglobulin M-capture enzyme immunoassay). Cross reactive serologic reactions to other flaviviruses must be excluded, and the patient should not have a history of yellow fever vaccination.

**28.4.3 Confirmed:** A suspected case that is laboratory-confirmed (national reference lab) or epidemiologically linked to a confirmed case or outbreak.

**28. 5. Laboratory criteria for diagnosis**

Isolation of yellow fever virus, or

Detection of yellow fever specific IgM or a four-fold or greater rise in serum IgG levels in paired sera (acute and convalescent) or

Positive post-mortem liver histopathology or

Detection of yellow fever antigen in tissues by immunohistochemistry or

Detection of yellow fever virus genomic sequences in blood or organs by PCR

# 29. Leishmaniasis

**29.1. ICD 10 Classification – B55** (for further details refer ICD 10, volume 1, WHO 1992)

**29.2. Surveillance case definition**

An illness with one or more localized skin lesions (nodules, papules or ulcers) that commonly appear on the exposed areas of the body (E.g. face, neck, arms, legs ) or rare involvement of viscera (liver, spleen) or the mucosal tissue in mouth/nose.

**29.3. Rationale for surveillance**

Surveillance is essential to establish the disease impact and estimate the disease burden. It is the main tool of prediction and detection of epidemics and/or outbreaks. Surveillance also is a major strategy of disease prevention and control.

**29.4. Case classification**

**29.4.1. Suspected:**

A patient compatible with the surveillance case definition.

**29.4.2. Confirmed:**

A suspected case with laboratory confirmation.

**29.5. Laboratory criteria for diagnosis**

**29.5.1.** Cutaneous Leishmaniasis: Positive microscopy for parasites (stained smear either direct or following culture) or positive histology or positive PCR.

**29.5.2.** Mucosal or Visceral Leishmaniasis: Positive serology (IFA/ ELISA/ RDT), positive microscopy for parasites (stained smear either direct or following culture) or positive histology or positive PCR.



# 30. Influenza

**30.1. I CD 10 Classification: J09 - J11** (for further details refer ICD 10, volume 1, WHO 1992)

**30.2. Surveillance case definitions**

**30.2.1. Influenza like illness (ILI)**

A person with an acute respiratory illness with fever ⩾38ºC and cough.

**30.2.2. Severe Acute Respiratory Illness (SARI)**

**30.2.2.1. Patients < 5 years**

Any child aged 2 months to 5 years with cough or difficulty in breathing and:

-Breathing faster than 40 breaths / minute (ages 1-5 years)

-Breathing faster than 50 breaths / minute (ages 2-12months)

Or:

Any child aged 2 months to 5 years with cough or difficulty in breathing and:

-Unable to drink/breastfeed or vomits everything fed

-convulsions, or

-lethargic, or

-unconscious, or

-chest indrawing or stridor in a calm child

And

-requires hospital admission

**30.2.2.2. Patients > 5 years**

A person with acute respiratory illness with history of fever and cough

And

-Requires hospital admission.

**30.3. Rationale for surveillance**

Surveillance is essential to provide timely quality epidemiological data to establish and monitor baseline trends in influenza like illnesses. Surveillance data also will detect the start of influenza season in the country and describe the influenza seasonality in the country.

Laboratory surveillance will identify locally circulating influenza types and subtypes and their relationship to regional and global patterns. This also will help to monitor antiviral sensitivity and help to understand the relationships between the illness severity and the virus strains.

**30.4. Case classification**

**30.4.1. Suspected:**

A patient compatible with the surveillance case definition.

**30.4.2. Confirmed:**

A suspected case with laboratory confirmation.

**30.5. Laboratory criteria for diagnosis**

Positive rRT PCR test for influenza from respiratory samples (nasal swabs, deep throat swabs, naso-pharhyengeal aspirates).

*Annex I*

# List of notifiable diseases in Sri Lanka

(Approved by the Advisory Committee on Communicable Diseases on 05th September 2008)

| Column I<br>Disease | Column II<br>Proper Authority | Column III<br>Mode of Notification |
|---|---|---|
| Cholera<br>Plague<br>Yellow Fever | Director General of Health Services, Deputy Director General (Public Health Services), Epidemiologist, Regional Epidemiologist, Divisional Director of Health Services/Medical Officer of Health | By telephone, fax or telegram and in notification form I (H-544) |
| Acute Poliomyelitis/Acute Flaccid Paralysis<br>Chicken pox<br>Dengue Fever/ Dengue Hemorrhagic Fever<br>Diphtheria<br>Dysentery<br>Encephalitis<br>Enteric Fever<br>Food Poisoning<br>Human Rabies<br>Leptospirosis<br>Malaria<br>Measles<br>Meningitis<br>Mumps<br>Rubella/Congenital Rubella Syndrome<br>Simple Continued Fever of 7 days or more<br>Tetanus/Neonatal Tetanus<br>Typhus Fever<br>Viral Hepatitis<br>Whooping Cough<br>Leishmaniasis | Divisional Director of Health Services/Medical Officer of Health | By notification in form I (H-544) |
| Sever Acute Respiratory Syndrome (SARS)/ Suspected for SARS | Director General of Health Services, Deputy Director General (Public Health Services), Director/Quarantine, Air Port Health Officer, Port Health Officer, Epidemiologist, Regional Epidemiologist, Divisional Director of Health Services/Medical Officer of Health | By telephone, fax or telegram and in notification form I (H-544) |
| Tuberculosis | Director/National Programme for Tuberculosis Control and Chest Diseases | By notification in form II (H- 816) |



*Annex 2*

# Glossary

***Source: WHO recommended surveillance standards WHO/CDS/CSR/ISR/99.2***

**ACTIVE CASE FINDING**

The process of seeking out cases or health events under surveillance.

**ATTACK RATE**

The cumulative incidence of infection in a group observed over a period during an epidemic. This "rate" can be determined empirically by identifying clinical cases and/ or by means of seroepidemiology. Because its time dimension is uncertain or arbitrarily decided, it should probably not be described as a rate.

(Last JM, A Dictionary of Epidemiology, 1997).

**CASE**

A person who has the particular disease, health disorder, or condition which meets the case definition for surveillance and outbreak investigation purposes. The definition of a case for surveillance and outbreak investigation purpose is not necessarily the same as the ordinary clinical definition.

**CASE CLASSIFICATION**

Gradations in the likelihood of being a case (e.g., suspected / probable / confirmed). This is particularly useful where early reporting of cases is important (e.g., ebola haemorrhagic fever) and where there are difficulties in making definite diagnoses (e.g., specialized laboratory tests required).

**CASE DEFINITION**

A set of diagnostic criteria that must be fulfilled for an individual to be regarded as a case of a particular disease for surveillance and outbreak investigation purposes. Case definitions can be based on clinical criteria, laboratory criteria or a combination of the two with the elements of time, place and person.

**CASE-FATALITY RATE**

The proportion of cases of a specified condition which are fatal within a specified time. (Adapted from Last JM, A Dictionary of Epidemiology, 1997).

**CLUSTER**

Aggregation of relatively uncommon events or diseases in space and/or time in amounts that are believed or perceived to be greater than could be expected by chance.

**COMMUNICABLE DISEASE**

(Synonym: infectious disease) An illness due to a specific infectious agent or its toxic products that arises through transmission of that agent or its products from an infected person, animal, or reservoir to a susceptible host, either directly or indirectly through an intermediate plant or animal host, vector, or the inanimate environment.

(Last JM, A Dictionary of Epidemiology, 1997).

**CONTACT (OF AN INFECTION)**

A person or animal that has been in such association with an infected person or animal or a contaminated environment as to have had opportunity to acquire the infection. (Last JM, A Dictionary of Epidemiology, 1997).

**ENDEMIC**

The constant presence of a disease or infectious agent within a given geographic area or population group; may also refer to the usual prevalence of a given disease within such area or group. The expression "endemic disease" has a similar meaning.

(Adapted from Last JM, A Dictionary of Epidemiology, 1997).

**EPIDEMIC**

The occurrence in a community or region of cases of an illness, specific health-related behaviour, or other health-related events clearly in excess of normal expectancy. The community or region and the period in which the cases occur are specified precisely. The number of cases indicating the presence of an epidemic varies according to the agent, size, and type of population exposed; previous experience or lack of exposure to the disease; and time and place of occurrence.

(Adapted from Last JM, A Dictionary of Epidemiology, 1997).

**EXPOSURE**

Proximity and/or contact with a source of an agent in such a manner that effective transmission of the agent, harmful or protective effects of the agent may occur.

(Adapted from Last JM, A Dictionary of Epidemiology, 1997).

**FEEDBACK**

The regular process of sending analyses and reports about the surveillance data back through all levels of the surveillance system so that all participants can be informed of trends and performance.

**HEALTH EVENT**

Any event relating to the health of an individual (e.g., the occurrence of a case of a specific disease or syndrome, the administration of a vaccine or an admission to hospital).

**INCIDENCE**

The number of instances of illness commencing, or of persons falling ill, during a given period in a specified population. Incidence is usually expressed as a rate, the denominator being the average number of persons in the specified population during the defined period or the estimated number of persons at the mid-point of that period

**NOTIFIABLE DISEASE**

A disease that, by legal requirements, must be reported to the public health or other authority in the pertinent jurisdiction when the diagnosis is made.

(Adapted from Last JM, A Dictionary of Epidemiology, 1997)



**NOTIFICATION**

The processes by which cases or outbreaks of diseases are brought to the knowledge of the health authorities.

**OUTBREAK**

An epidemic limited to localized increase in the incidence of a disease, e.g., in a village, town, or closed institution.

(Adapted from Last JM, A Dictionary of Epidemiology, 1997).

**PERFORMANCE INDICATORS**

Specific agreed measurements of how participants are functioning within the surveillance or reporting system. These indicators may measure both the process of reporting (e.g., completeness, timeliness) and the action taken in response to surveillance information (e.g., the percentage of cases investigated or surveyed) and the impact of surveillance and control measures on the disease or syndrome in question (e.g., the percentage of outbreaks detected by the system, the drop in the number of cases over a specified time period).

**PREVALENCE**

The number of instances of illness or of persons ill, or of any other event such as accidents, in a specified population, without any distinction between new and old cases. Prevalence may be recorded at a stated moment (point prevalence) or during a given period of time (period prevalence).

**SEASONAL VARIATION**

Change in occurrence of a disease or health event that conforms to a regular seasonal pattern.

(Last JM, A Dictionary of Epidemiology, 1997).

**SECULAR TREND**

(Synonym: temporal trend) Changes over a long period of time, generally years or decades. (Adapted from Last JM, A Dictionary of Epidemiology, 1997).

**SEROSURVEILLANCE**

The surveillance of an infectious disease through immunological markers of the disease in a population or sub-population (e.g. measuring the presence of HIV antibodies in pregnant women coming for antenatal care).

**SENSITIVITY**

The ability of a surveillance or reporting system to detect true health events i.e. the ratio of the total number of health events detected by the system over the total number of true health events as determined by an independent and more complete means of ascertainment.

**SPECIFICITY**

A measure of how infrequently a system detects false positive health events i.e. the number of individuals identified by the system as not being diseased or not having a

risk factor, divided by the total number of all persons who do not have the disease or risk factor of interest.

**SURVEILLANCE**

The process of systematic collection, orderly consolidation and evaluation of pertinent data with prompt dissemination of the results to those who need to know, particularly those who are in a position to take action (Adapted from Report of the Technical Discussions at the twenty-first World Health Assembly on National and Global Surveillance of Communicable Diseases, 18 May 1968 – A21/Technical Discussion/5)

**SURVEILLANCE, ACTIVE**

Surveillance where public health officers seek reports from participants in the surveillance system on a regular basis, rather than waiting for the reports (e.g. telephoning each participant monthly).

**SURVEILLANCE, CASE-BASED**

Surveillance of a disease by collecting specific data on each case (e.g. collecting details on each case of acute flaccid paralysis (AFP) in poliomyelitis surveillance).

**SURVEILLANCE, COMMUNITY**

Surveillance where the starting point for the notification is from community level, normally reported by a community worker. It can be active (looking for cases) or passive (reporting cases).

**SURVEILLANCE, ENHANCED**

The collection of additional data about cases reported under routine surveillance. Routine surveillance is a starting point for more specific data collection on a given health event. This information may be sought from the reporter, the case, the laboratory or from another surveillance data set.

**SURVEILLANCE, HOSPITAL-BASED**

Surveillance where the starting point for notification is the identification by a hospital of a patient with a particular disease or syndrome.

**SURVEILLANCE, LABORATORY**

Surveillance where the starting point is the identification or isolation of a particular organism in a laboratory.

**SURVEILLANCE, PASSIVE**

Surveillance where reports are awaited and no attempts are made to seek reports actively from the participants in the system.

**SURVEILLANCE, ROUTINE**

The regular systematic collection of specified data in order to monitor a disease or health event.



**SURVEILLANCE, SENTINEL**

Sentinel surveillance is surveillance based on the collection of data from a sample (random or non-random) of collecting sites as indicator data for the rest of the population, in order to identify cases of a disease early or to obtain indicative data about trends of a disease or health event. Examples are the use of a few hospitals to monitor the composition of influenza virus and check that the vaccine includes the right

components, or the use of a network of general practitioners to monitor diseases or health events (e.g. attempted suicide, requests for HIV testing ). One instance of sentinel surveillance is the use of a particular population group (e.g., monitoring the serology of syphilis among pregnant women as an indicator of syphilis trends in the general population). Sentinel surveillance is inappropriate for those situations where every case requires public health action, e.g., poliomyelitis.

**SURVEILLANCE REPORT**

A regular publication with specific information on the disease under surveillance. It should contain updates of standard tables and graphs as well as information on outbreaks etc. In addition it may contain information on the performance of participants using agreed performance indicators.

**SURVEY**

An investigation in which information is systematically collected. Usually carried out in a sample of a defined population group, within a defined time period. Unlike surveillance it is not ongoing; however, if repeated regularly, surveys can form the basis of a surveillance system.

**SYNDROME**

A symptom complex in which the symptoms and/or signs coexist more frequently than would be expected by chance on the assumption of independence.

(Last JM, A Dictionary of Epidemiology, 1997).

**ZERO REPORTING**

The reporting of "zero case" when no cases have been detected by the reporting unit. This allows the next level of the reporting system to be sure that the participant has not sent data that have been lost, or that the participant has not forgotten to report.

*Annex 3*

# Contributors

**1. Participants at the Workshop**

1. Dr. P S Jayasinghe - Regional Epidemiologist, Kandy
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9. Dr. D D S de Silva - Consultant Pediatrician/Lady Ridgeway Hospital - Representative for Sri Lanka College of Pediatricians.
10. Dr. S. W. Pathinayaka - Provincial Director of Health Services/Southern Province
11. Dr. G Galappaththi - Consultant Community Physician - Representative for Director/Anti Malaria Campaign.
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16. Dr. T. A. Kulathillake - Former Epidemiologist
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18. Dr. B. K. R. Batuwanthudawe - Medical Officer, Epidemiology Unit

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3. Editing - Dr.B.K.R. Batuwanthudawe, Consultant Epidemiologist, Epidemiology Unit.



*Annex 4*



**බෝවෙන රෝග පිළිබඳ නිවේදනය**
**தொற்றுநோய் பற்றிய அறிவிப்பு**
**NOTIFICATION OF A COMMUNICABLE DISEASE**

ආයතනය / நிலையம் / Institute ..... රෝගය / நோய் / Disease .....

රෝගියාගේ නම*
நோயாளியின் பெயர்
Name of Patient ..... සැදුණු දිනය
ஆரம்பித்த திகதி
Date of Onset .....

*ළමා රෝගීන්ගේ මව/පියා/භාරකරුගේ නම පහතින් සඳහන් කරන්න
நோயாளி சிறுவராயின் பெற்றோர்/பாதுகாவலர் பெயர்
Peaditric patients- Name of Mother/Father/Guardian ඇතුලත් කළ දිනය
அனுமதித்த திகதி
Date of admission .....

.....

ඇඳ ඉහපත් අංකය
கட்டில் சிட்டை இல.
B.H.T. No. ..... වාට්ටුව
விடுதி
Ward ..... වයස
வயது
Age ..... ස්ත්‍රී/පුරුෂ භාවය
பால்
Sex .....

රසායනාගාර වාර්තා (තිබේනම් පමණක්)
முக்கிய ஆய்வு முடிவுகள் (பெறக்கூடியதாக இருப்பின்)
Laboratory Results (If available) .....

රෝගියාගේ නිවසේ ලිපිනය (මහජන සෞඛ්‍ය පරීක්ෂකට නිවස සොයා ගැනීමට හැකිවන පරිදි)
நோயாளியின் வீட்டு விலாசம் (நோயாளியின் வீட்டை அடையாளம் காண்பதற்கு வசதியாக)
Home address of Patient (To trace the patient's residence by the Public Health Inspector)
.....
.....
.....

රෝගියාගේ නිවසේ දුරකථන අංකය
நோயாளியின் வீட்டு தொலைபேசி இல
Patient's Home Telephone No. .....

| ..... | ..... | ..... | ..... |
|---|---|---|---|
| දනුම් දෙන්නාගේ අත්සන<br>அறிவிப்பவரின் கையொப்பம்<br>Signature of Notifier | නම<br>பெயர்<br>Name | තරාතිරම<br>அந்தஸ்து<br>Status | දිනය<br>திகதி<br>Date |

කරුණාකර බෝවෙන රෝග පිළිබඳ ලැයිස්තුව සඳහා පසුපිට බලන්න
மறுபக்கத்திலுள்ள அறிவிக்கப்படவேண்டிய நோய்களின் பட்டியலைப் பார்க்கவும்
Please see overleaf for the list of Notifiable Diseases.