CASE DEFINITION FOR NOTIFIABLE DISEASES IN MALDIVES 2008

Department of Public Health

Male' Republic of Maldives

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ACRONYMS

ABST –	Antibiotic Sensitivity Test
AFP –	Acute Flaccid Paralysis
CSF –	Cerebro Spinal Fluid
DF –	Dengue Fever
DHF –	Dengue Hemorrhagic Fever
DSS –	Dengue Shock Syndrome
EIA -	Enzyme immunoassay
ELISA –	Enzyme linked Immunosorbent Assay
FA –	Fluorescent Antibody
HBsAG –	Hepatitis B surface antigen
HCV –	Hepatitis C virus
HDV –	Hepatitis D virus
HEV –	Hepatitis E virus
HFMD –	Hand Foot and Mouth Disease
IF –	Indirect Immunofluorescence
IgG –	Immunoglobulin G
IgM –	Immunoglobulin M
JE –	Japanese encephalitis
PCR –	Polymerase Chain Reaction
PHA –	Passive Haemoagglutination

HI –	Haemoagglutination Inhibition
SIDAS -	SEARO Integrated Data Analysis System
SAT –	Standard Agglutination Test
TB –	Tuberculosis
WHO –	World Health Organization

INTRODUCTION

The purpose of this booklet is to standardize case definitions that are required for the surveillance of communicable diseases in the Maldives. The booklet includes national recommendations for 31 notifiable diseases in additional to the case definitions of four diseases that are required to be notified to WHO under the International Health Regulation 2005.

The 31 national case definitions were developed through a series of technical consultations of senior health professionals and the discussions with use of baseline documents such WHO recommended surveillance standards, surveillance case definitions produced in SEA region, IMCI guidelines and Control of Communicable Disease Manuals.

This document is will be updated regularly reflecting the changing nature of disease epidemiology and accompanying diagnostic and surveillance methods.

For each disease or syndrome, there is a clinical case definition, disease classification and Laboratory criteria.

ACUTE FLACCID PARALYSIS

Maldives recorded its last indigenous case of poliomyelitis in 1981 (Last case of poliomyelitis due to wild poliovirus was recorded in 1994. This is a 6 years old boy who had received 1 dose of OPV, who has been living in India for 2 years. The case was reviewed by a WHO STC, which included an active search for other cases. The case was determined to be an imported case) and since then no case of wild polio has been detected in the country. Poliomyelitis is a disease under the national elimination/eradication programme and the country is working for certification of eradication of the disease. According to WHO AFP surveillance criterion would be of "certification standard" if the following three performance criteria are to be achieved.

a- The system should detect at least Two case of non-polio AFP for every 100 000 children under 15 years of age.

b- Two adequate diagnostic specimens should be collected from at least 80% of detected AFP cases

c- All specimens should be processed at a WHO accredited laboratory.

Therefore, in addition to the passive case reporting system that exists in the country a specific active case finding system operates for poliomyelitis.

Surveillance Case Definition:

Any child under 15 years of age with acute, flaccid paralysis* or any person with paralytic illness at any age when poliomyelitis is suspected.

* Guillain Barre Syndrome,Transverse Myelitis, Traumatic Neuritis, and infective polyneuritis.

Case Classification:

SUSPECTED: A case that meets the clinical case definition.

CONFIRMED: A case with laboratory confirmation with the polio virus from a WHO accredited laboratory.

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.

SPECIAL ASPECTS:

Surveillance performance should meet the following criteria:

1–At least 2 children under 15 years of age should be detected in Maldives (based on 2006 population data).

2– Two adequate specimens* collected from detected AFP cases.

- **Adequate specimens—mean 2 specimens collected 24-48 hours apart and within 14 days of onset of paralysis. The specimen arriving at the laboratory must be of adequate volume (approximately 8-10 grams), have appropriate documentation (i.e. laboratory request form) and be in "good condition" (no leakage, no desiccation, and evidence that the reverse cold chain was maintained).*

3- The specimens are to be sent through DPH to WHO reference laboratory for confirmation.

4- AFP cases must be reported to DPH immediately, be investigated within 48 hours, and stool specimens must be collected within 14 days of paralysis onset.

ACUTE RESPIRATORY INFECTION

Surveillance Case Definition:

An illness of upper respiratory tract, characterized by coryza, sneezing, lacrimation, irritated nasopharynx, chilliness, fever, headache and malaise lasting 2-7 days.

Case Classification: Not applicable

Note: ARI is regarded as one of the highest priority disease conditions that cause high morbidity in children. Using different doses of antibiotics and cough syrups complicate the treatment procedures and case management, which may harm the child's health condition.

CHICKEN POX (VARICELLA)

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

Case Classification:

SUSPECTED: A case that is compatible with the surveillance case definition.

Laboratory diagnosis: Not required

CHIKUNGUNYA

Surveillance Case Definition:

An acute illness characterized by sudden onset of fever with the following symptoms: severe and sometimes persistent joint pain with myalgia, headache, with or without rash

Case Classification:

SUSPECTED: A case that is compatible with the surveillance case definition.

PROBABLE: As above and positive serology (when single serum sample is obtained during acute phase or during the convalescence).

Above symptoms during a confirmed outbreak

CONFIRMED: A probable case with any of the following:

- Four fold HI antibody difference in paired difference in paired serum samples.
- Virus isolation from serum.
- Detection of Chikungunya virus nucleic acid in sera by RT-PCR.

CHOLERA

Surveillance Case Definition:

In an area where the disease is not known to be present: Severe dehydration or death from acute watery diarrhea in a patient aged 5 years or more **or**
In an area where there a cholera epidemic: acute watery diarrhea, with or without vomiting in a patient aged 5 years or more*

* Cholera does appear in children under 5 years; however, the inclusion of all cases of acute watery diarrhea 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 diarrhea in an area where there is a cholera epidemic, cholera should be suspected in all patients.

Case Classification:

SUSPECTED: A case that meets with the clinical case definition

CONFIRMED: A suspected case that is laboratory confirmed

Laboratory criteria for diagnosis: Isolation of *Vibrio Cholerae* O1 or O139 from stools in any patient with diarrhea.

From peripheral facilities samples should be processed and sent to the atoll /regional hospital or Male' (IGMH)

DENGUE

DENGUE FEVER (DF):

Surveillance Case Definition:

An acute febrile illness of 2-7 days duration (sometimes with two peaks) with **two or more** of the following manifestations:

* headache
* retro -orbital pain
* myalgia/arthralgia
* rash
*haemorrhagic manifestation (petechiae and positive tourniquet test1) and,
* leukopenia.

In children, DF is usually mild. In some adults, DF may be the classic incapacitating disease with severe bone pain and

recovery may be associated with prolonged fatigue and depression.

Case Classification:

SUSPECTED: A case compatible with the surveillance case definition.

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

- Recent Infection: Positive IgM antibody test in late acute or early convalescent-phase serum specimen
- Secondary—IgG titre * 2560 HI units with or without positive IgM antibody test in late acute or early convalescent-phase serum specimen
- Occurrence at same location and at the time as another confirmed cases of dengue fever

CONFIRMED: A case compatible with the surveillance case definition which is laboratory confirmed.

DENGUE HAEMORRHAGIC FEVER (DHF):

A probable case of dengue and haemorrhagic tendency evidenced by one or more of the following:

* Positive tourniquet test

* Petechiae, ecchymosis or purpura

* Bleeding from mucosa (mostly epistaxis or bleeding from gums), injection sites or other sites

* Haematemesis or melena

* Thrombocytopaenia (platelets 100,000/cu.mm or less) and

* Evidence of plasma leakage due to increased capillary permeability manifested by **one or more** of the following:

– A >20% rise in haemotocrit for age and sex

– A >20% drop in haemotocrit following treatment with fluids as compared to baseline

– Signs of plasma leakage (pleural effusion, ascites or hypoproteinaemia).

DENGUE SHOCK SYNDROME (DSS):

All the above criteria of DHF plus signs of circulatory failure manifested by rapid and weak pulse, narrow pulse pressure (< or equal to 20 mm Hg); hypotension for age, cold and clammy skin and restlessness.

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 serum, CSF or autopsy tissues by polymerase chain reaction (PCR).
- Demonstration of a fourfold or greater rise in IgG titter to one or more dengue virus antigens serum samples by ELIZA or HI assay.

***Note**: The tourniquet test is performed by inflating a blood pressure cuff to a point mid-way between the systolic and diastolic pressures for five minutes. A test is considered positive when 10 or more petechiae per 2.5 cm2 (1 inch) are observed. In DHF, the test usually gives a definite positive result (i.e. >20 petechiae). The test*

may be negative or mildly positive during the phase of profound shock.

DIARRHOEA

Acute (watery) diarrhoea

A person with passage of loose watery stools 3 or more per day with or without dehydration.*

*this definition excludes cholera *(refer to cholera definition in pg 13)*

Laboratory criteria for diagnosis

Laboratory culture of stools may be used to confirm possible outbreaks of specific agents, but is not necessary for case definition.

Case Classification: Not applicable

DYSENTRY

Surveillance Case Definition:

An illness of variable severity characterized by diarrhea with blood and or mucus and with or without fever, nausea, abdominal cramps, and tenesmus.

Case Classification:

SUSPECTED: A case compatible with the surveillance case definition.

PROBABLE: Not applicable

CONFIRMED: Bacillary dysentry: A suspected case in which the stools culture isolates a causative bacterial organism.

Amoebic Dysentry: Microscopic demonstration of trophozoites or cysts in stool samples collected from patient.

Laboratory criteria for diagnosis

Stool culture and ABST for sensitivity pattern.

DIPHTHERIA

Surveillance Case Definition:

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

Case Classification:

SUSPECTED: Not Applicable

PROBABLE: A case that meets the surveillance case definition.

CONFIRMED: A probable case that is laboratory confirmed or linked epidemiologically to a laboratory confirmed case.

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

Laboratory criteria for diagnosis

Isolation of Corynebacterium diphtheria from a clinical specimen.

ENCEPHALITIS

Surveillance Case Definition:

A febrile illness of variable severity associated with neurological features ranging from headache to altered level of consciousness with or without signs and symptoms suggestive of meningitis. Symptoms can include: headache, fever, meningeal signs, seizures, stupor, disorientation, coma, tremors, paresis (generalized), hypertonia, loss of coordination.

Case Classification:

SUSPECTED: A case that is compatible with the clinical description.

PROBABLE: A suspected case with presumptive laboratory results.

CONFIRMED: A suspected case with confirmatory laboratory results.

Laboratory criteria for diagnosis:

Presumptive:

- Elevated and stable serum antibody titres to virus through ELISA, haemagglutination-inhibition or virus neutralization assays or
- IgM antibody to the virus in the serum.

Confirmatory:

- Detection of the virus, antigen or genome in brain, spinal cord by immunochemistry or immunoflurescence or PCR
- virus-specific IgM antibody in the CSF by IgM capture ELISA or
- Fourfold or greater rise in virus-specific IgG antibody in paired sera (acute and convalescent phases), ELISA, haemagglutination inhibition test or virus neutralization test

FILARIA (LYMPHATIC)

Surveillance Case Definition:

Symptoms vary, depending on what type of parasitic worm has caused the infection, but all infections usually begin with chills, headache, and high fever. There may also be swelling, redness and pain in the arms, legs, or scrotum.

OR

Hydrocoele, lymphoedema, elephantiasis or chyluria in a resident of a known filarial endemic area or of a person with a travel history to a filarial endemic area for which other causes of these findings have been excluded.

Case Classification:

SUSPECTED: Not applicable

PROBABLE: A case that meets the surveillance case definition

CONFIRMED: A person with laboratory confirmation even if he/she does not meet the clinical case definition.

Laboratory criteria for diagnosis

A diagnosis is confirmed by screening blood specimens for specific filarial antigens or antibodies by ELISA or immunochromatic test cards. Live microfilariae circulate in the peripheral blood at night with greatest concentration between about 10pm and 2am during which blood is collected for microscopic examination.

FOOD POISONING

Surveillance Case Definition:

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

Case Classification:

SUSPECTED: A case that meets the surveillance case definition.

PROBABLE: Not applicable

CONFIRMED: A suspected case in which laboratory investigation confirms the presence of one or more food borne pathogens in a clinical

specimen.

Laboratory criteria for diagnosis

☝ Isolation of certain food borne organism (eg. 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.

HAND FOOT AND MOUTH DISEASE

Surveillance Case Definition:

An illness caused by a virus, commonest being Coxsackie virus (A16) and Enterovirus 71. The incubation period of the illness is often 3 -5 days. The disease is generally mild and self-limiting. A person with HFMD usually presents with the following symptoms:

- Fever for 2-3 days
- Sore throat
- Mouth ulcers, rash & vesicles over extremities

HMFD is spread through direct contact with the respiratory droplets, saliva, faeces or blister fluid of an infected person and indirectly by contaminated articles.

HEPATITIS (VIRAL)

Surveillance Case Definition:

Hepatitis A and E:

Acute illness including fever, acute jaundice, dark urine, anorexia, malaise, extreme fatigue, and right upper quadrant tenderness with or without abdominal discomfort and diarrhoea.

Hepatitis B and C:

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

tenderness

Case Classification:

SUSPECTED: A case that is compatible with the surveillance case definition

PROBABLE: Not applicable

CONFIRMED:

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.

Hepatitis B and C: A suspected case who is laboratory confirmed.

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.

Hepatitis C: Demonstration of Hepatitis C antibodies (anti-HCV) in a serum sample.

Hepatitis E: Demonstration of Hepatitis E antibodies (anti-HEV) in a serum sample.

LEPROSY

Surveillance Case Definition:

The clinical manifestations of the disease vary in a continuous spectrum between the two polar forms, lepromatous and tuberculoid leprosy:

- In lepromatous (multibacillary) leprosy, nodules, papules, macules and diffuse infiltrations are bilateral symmetrical and usually numerous and extensive; involvement of the nasal mucosa may lead to crusting, obstructed breathing and epistaxis; ocular involvement leads to iritis and keratitis
- In tuberculoid (paucibacillary) leprosy, skin lesions are single or few, sharply demarcated, anaesthesic or hypoaesthesic, and bilateral asymmetrical, involvement of peripheral nerves tends to be severe
- Borderline leprosy has features of both polar forms and is more labile
- Indeterminate leprosy is characterized by hypopigmented maculae with ill-defined borders; if untreated, it may progress to tuberculoid, borderline

or lepromatous disease

Case Classification:

WHO operational definition:

A case of leprosy is defined as a person showing one or more of the following features, and who as yet has to complete a full course of treatment:

- Hypopigmented or reddish skin lesions with definite loss of sensation
- Involvement of the peripheral nerves, as demonstrated by definite thickening with loss of sensation
- Skin smear positive for acid-fast bacilli

Classification (microbiological):

Paucibacillary (PB): includes all smear-negative cases

Multibacillary (MB): includes all smear-positive cases

Classification (clinical):

Paucibacillary single lesion leprosy: 1 skin lesion

Paucibacillary leprosy: 2 to 5 patches or lesions on the skin

Multibacillary leprosy: >5 patches or lesions on the skin

MALARIA

Surveillance Case Definition:

Signs and symptoms vary, but most patients experience fever. Common associated symptoms include headache, back pain, chills, sweats, myalgia, nausea, vomiting, diarrhoea and cough.

Case Classification:

Uncomplicated malaria: A person showing signs and symptoms of malaria, with or without microscopic confirmation, who requires antimalarial treatment.

Severe malaria: a patient requires hospitalization foe a febrile disease and is treated for severe malaria. The diagnosis should preferably be confirmed microscopically.

Laboratory criteria for diagnosis

Demonstration of malaria parasites in blood films.

MEASLES

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) or conjunctivitis (i.e. red eyes)

Case Classification:

SUSPECTED: A case that meets the surveillance case definition

PROBABLE: Not applicable

CONFIRMED: A case that meets the surveillance case definition and that is laboratory confirmed or linked epidemiological by to a laboratory-confirmed case

Laboratory criteria for diagnosis

- At least a four fold increase in antibody titre or isolation of measles virus or
- Presence of measles specific IgM antibodies

MENINGITIS

Surveillance Case Definition:

An illness with sudden onset of fever (>38.5^{0}C rectal or (>38.0^{0}C axillary) and one or more of the following

- Neck stiffness
- Altered consciousness
- Other meningeal sign or petechial or purpural rash

In patients <1 year, suspect meningitis when fever accompanied by bulging fontanelle.

Case Classification:

SUSPECTED: A case that meets the surveillance case definition

PROBABLE: A suspected case as defined above **and** Turbid CSF (with or without positive Gram

stain) and elevated white cells counts in the CSF **or**

Ongoing epidemic and epidemiological link to a confirmed case

CONFIRMED: A suspected or probable case with laboratory confirmation.

Laboratory criteria for diagnosis

- Positive CSF antigen detection **or**
- Positive CSF culture

MUMPS

Surveillance Case Definition:

An illness with acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland, lasting 2 or more days, and without other apparent cause.

Case Classification:

SUSPECTED: A case that meets the surveillance case

definition

PROBABLE: Not applicable

CONFIRMED: A suspected case positive for Mumps specific IgM antibody.

Laboratory criteria for diagnosis

Demonstration of mumps specific IgM antibody in a single serum sample.

NEONATAL TETANUS

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.

Case Classification:

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.

PROBABLE: Not applicable

CONFIRMED: Any neonate with a normal ability to suck and cry during the first two days of life, and who between 3 and 38 days of age cannot suck normally, and become stiff or has convulsion (i.e. jerking of the muscles) or both.

Hospital-reported cases of neonatal tetanus are considered confirmed.

Laboratory criteria for diagnosis

The diagnosis is purely clinical and does not depend upon laboratory or bacteriological confirmation.

PLAGUE

Surveillance Case Definition:

Disease characterized by rapid onset of fever, chills, headache, severe malaise, prostration, and with

- Bubonic form: extreme painful swelling of lymph nodes (buboes)
- Pneumonic form; cough with blood-stained sputum, chest pain, difficult breathing

Case Classification:

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

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.

CONFIRMED: A suspected or probable case that is laboratory-confirmed.

Laboratory criteria for diagnosis

- Isolation of *Yersinia pestis* in culture 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.

PNEUMONIA

Surveillance Case Definition:

Pneumonia

Symptoms fever, cough or difficult breathing and

Signs breathing faster than 50/min for child 2-12 months

Breathing faster than 40/min for child 1-5 years **and**

no chest indrawing, stridor or danger signs

Severe pneumonia

Symptoms: Cough or difficult breathing + any danger sign or chest indrawing or stridor in a calm child

Danger signs:

For child 2 months to 5 years

Not able to drink or breastfeed, vomits everything, convulsion, lethargic or

unconscious

For child under 2 months

Stopped feeding well, convulsions, lethargy or unconscious, wheezing, fever or low body temperature

NB. Chest indrawing + recurrent wheeze = asthma, probably not pneumonia

Laboratory criteria for diagnosis

In complications (pneumonia, sepsis, meningitis), specific diagnosis depends on isolation of the etiologic agent from respiratory secretions in appropriate cell or organ cultures, identification of viral antigen in nasopharyngeal cells by FA, ELISA and RIA tests and / or antibody studies of paired sera.

RUBELLA

Surveillance Case Definition:

An illness that has following characteristics:

- Acute onset of generalized maculopapular rash
- Temperature greater than 99.0^0F (greater than 37.2^0C),
- With or without Arthralgia / arthritis, lymphadenopathy (usually suboccipital, postauricular and cervical) or conjunctivitis

Case Classification:

SUSPECTED: A patient who is compatible with the surveillance case definition

PROBABLE: A case that meets the surveillance case

definitions and has no or non-contributory serologic or virologic testing and is not epidemiologically linked to a laboratory confirmed case.

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.

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.

SCRUB TYPHUS

Surveillance Case Definition:

Fever with ***single*** papule / skin ulcer

A disease with a primary "punched out" skin ulcer (eschar*) where the bite(s) occurred, followed by acute onset fever after several days, along with headache, profuse sweating, conjunctival injection and lymphadenopathy. Within a week, a dull macula-papular rash** appears on the trunk, extends to the extremities and disappears in few days. Cough is also common. Defervescence within 48 hours following tetracycline therapy strongly suggests a rickettsial etiology.

* Eschar may be absent in some geographic areas and in highly endemic areas where reinfection is frequent.

** Rash may be overlooked in patients with dark or sunburned

skin.

Case Classification:

SUSPECTED: A case that meet with the surveillance case definition.

PROBABLE: Not applicable

CONFIRMED: A suspected case with laboratory confirmation.

Laboratory criteria for diagnosis

Isolation of *Orientia* tsutsugamushi* by inoculation of patient blood in white mice (preferably treated with cyclophosphamide at 0.2 mg/g intraperitoneally or intramuscularly on days 1,2 and 4 after inoculation).

* *Formerly Rickettsia*

Serology: Detection of specific IgM

at 1:100 or higher by Enzyme Immunoassay (EIA)

or 1:32 dilution or higher by Immunofluorescence (IF)

TUBERCULOSIS

Pulmonary tuberculosis, smear positive (PTB+):

- Tuberculosis in a patient with at least two initial sputum smear examinations (direct smear microscopy) positive for Acid fast Bacilli (AFB) **or,**
- Tuberculosis in a patient with one sputum examination positive for AFB and radiographic abnormalities consistent with active pulmonary tuberculosis as determined by the treating medical officer, **or**
- Tuberculosis in a patient with one sputum specimen positive for AFB and at least one sputum that is culture positive for AFB

Pulmonary tuberculosis, smear negative (PTB-):

Tuberculosis in a patient with symptoms suggestive of tuberculosis and having one of the following:

- Two sets (taken 2 weeks apart) of at least 2 sputum specimens negative for AFB; radiographic

abnormalities consistent with pulmonary tuberculosis and a lack of clinical response despite one week of a broad-spectrum antibiotic; a decision by a physician to treat with a full curative of anti-TB chemotherapy; **or**

- Severely ill; at least 2 sputum specimens negative for AFB radiographic abnormalities consistent with extensive pulmonary tuberculosis (interstitial or military); a decision by a physician to treat with a full curative course of anti-tuberculosis chemotherapy; **or**
- A patient whose initial sputum smears were negative, who had sputum sent for culture initially, and whose subsequent sputum culture result is positive

Extra-pulmonary Tuberculosis:

- Tuberculosis of organs other than lungs: pleura, lymph nodes, abdomen, genito-urinary tract, skin, joints and bones, TB meningitis, etc
- Diagnosis should be based on one culture positive

specimen from an extra-pulmonary site, or histological or strong clinical evidence consistent with active extra-pulmonary tuberculosis, followed by a decision by a medical officer to treat with a full course of anti-tuberculosis therapy

- Any patient diagnosed with both pulmonary and extra-pulmonary tuberculosis should be classified as case of pulmonary tuberculosis

Case Classification:

NEW CASE: A patient who has never had treatment for tuberculosis or took anti-tuberculosis drugs for less than 4 weeks

RELAPSE CASE: A patient previously treated for tuberculosis and declared cured by a medical officer after one full course of chemotherapy, but who reports back to the health service bacteriological positive

TYPHOID FEVER (ENTERIC FEVER)

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.

Case Classification:

SUSPECTED: A patient compatible with the surveillance case definition.

PROBABLE: A suspected case which is epidemiologically linked to a confirmed case in an outbreak.

CONFIRMED: A suspected case which is laboratory confirmed.

Laboratory criteria for diagnosis

Enteric 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.

WHOOPING COUGH

Surveillance Case Definition:

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

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

without other apparent cause

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

*** in neonates apnoeic attacks may be present*

Case Classification:

SUSPECTED: A case that meets the surveillance case definition

PROBABLE: Not applicable

CONFIRMED: A suspected case that is laboratory confirmed.

Laboratory criteria for diagnosis

Isolation of *Bordetella pertussis* or *Bordatella parapertussis*

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

YELLOW FEVER

Surveillance Case Definition:

An illness characterized by acute onset of fever followed by jaundice within 2 weeks of onset of first symptoms and Haemorrhagic manifestations and/or signs of renal failure with history of travel to yellow fever endemic countries within the last 6 days.

Case Classification:

SUSPECTED: A case that is compatible with the surveillance

case definition

PROBABLE: Not applicable

CONFIRMED: A suspected case that is laboratory-confirmed or epidemiologically linked to a confirmed case or outbreak

Laboratory criteria for diagnosis

- Isolation of yellow fever virus, or
- Presence of yellow fever specific IgM or a four fold or greater rise in serum IgG levels in paired sera (acute and convalescent) or
- Detection of yellow fever virus genomic sequences in blood or organs, by PCR

Reportable diseases under International Health Regulation (IHR)

WHO has published case definitions for the four diseases requiring immediate notification to WHO in all circumstances under the IHR (2005). They are **smallpox, poliomyelitis due to wild type poliovirus, human influenza caused by a new subtype and severe acute respiratory syndrome (SARS).** These diseases will be notified to WHO by the Ministry of Health.

a. Small pox

The clinical case definition for a confirmed smallpox case includes the following:

Confirmed case of smallpox:

An individual of any age presenting with acute onset of fever (≥38.3°C/101°F), malaise, and severe prostration with headache and backache occurring 2 to 4 days before rash onset

AND

Subsequent development of a maculopapular rash starting on the face and forearms, then spreading to the trunk and

legs, evolving within 48 hours to deep-seated, firm/hard and round well-circumscribed vesicles and later pustules, which may become umbilicated or confluent

AND

Lesions that appear in the same stage of development (i.e. all are vesicles or all are pustules)

AND

No alternative diagnosis explaining the illness

AND

Laboratory confirmation

Note: Even a single case of smallpox fitting the clinical case definition would be considered an outbreak since it no longer exists as a naturally occurring disease.

Note: Picture of small pox and chicken pox will be in Annex 3. While diagnosing smallpox please refer to this instruction.

b. Poliomyelitis due to wild-type poliovirus

Poliomyelitis due to wild-type polio virus is defined as a suspected case* with isolation of wild poliovirus in stool specimens[1] collected from the suspected case or from a close contact of the suspected case.

* A suspect case is defined as a child under 15 years of age presenting with acute flaccid paralysis (AFP[2]), or as any person at any age with paralytic illness if poliomyelitis is suspected.

[1] As a standard procedure, two stool specimens are collected from an AFP case within 14 days of paralysis onset. Since virus excretion in the stool decreases beyond two weeks after paralysis onset, and to increase the sensitivity of virus detection, additional stool specimens from up to five close contacts are taken from AFP cases for whom 2 specimens collected within 14 days of paralysis onset are not available.

[2] Poliomyelitis cannot be diagnosed reliably on clinical grounds because other conditions presenting with acute paralysis can mimic poliomyelitis. Surveillance for polio eradication therefore requires the reporting of all children less than 15 yrs with acute onset flaccid paralysis, with subsequent laboratory testing of stool specimens.

Note: isolation of wild or vaccine-derived poliovirus from other sources (example from persons without paralysis or from environmental samples) must also be notified to WHO under the IHR (2005)

c. Human influenza caused by a new subtype

WHO has to be immediately notified of any laboratory confirmed case of a recent human infection caused by an influenza A virus with the potential to cause a pandemic.

An influenza A virus is considered to have the potential to cause a pandemic if the virus has demonstrated the capacity to infect a human and if the heamagglutinin gene (or protein) is not a variant or mutated form of those, i.e. A/HI or A/H3, or circulating widely in the human population.

An infection is considered recent if it has been confirmed by positive results from polymerase chain reaction (PCR), virus isolation, or paired acute and convalescent serological tests. An antibody titer in a single serum is often not enough to conform a recent infection, and should be assessed by reference to valid WHO case definitions for human infections with specific influenza A subtypes.

d. Severe Acute Respiratory Syndrome (SARS)

SARS is defined as an individual with laboratory confirmation of infection with SARS coronavirus (SARS-CoV) who either fulfils the clinical case definition of SARS or has worked in a

laboratory working with live SARS-CoV or storing clinical specimens infected with SARS-CoV.

Clinical case definition of SARS:

A history of fever, or documented fever

AND

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

AND

Radiographic evidence of lung infiltrates consistent with pneumonia or acute respiratory distress syndrome (ARDS) or autopsy findings consistent with the pathology of pneumonia or ARDS without an identifiable cause

AND

No alternative diagnosis can fully explain the illness

Diagnostic tests required for laboratory confirmation of SARS:

A. Conventional reverse transcriptase polymerase chain reaction (RT-PCR) and real time reverse transcriptase PCR (real time RT-PCR) assay detecting viral RNA present in:
   1. At least two different clinical specimens (e.g. nasopharyngeal and stool)
      OR
   2. The same clinical specimen collected on two or more occasions during the course f the illness (e.g. sequential nasopharyngeal aspirates)
      OR
   3. In a new extract from the original clinical sample tested positive by two different assays or repeat RT-PCR/real-time RT-PCR on each occasion of testing
      OR
   4. In virus culture from any clinical specimen

B. Enzyme Linked Immunosorbent Assay (ELISA) and immunofluorescent assay (IFA)

   1. Negative antibody test on serum collected during the acute phase of illness followed by positive antibody test on convalescent phase serum, tested simultaneously

      OR

   2. Fourfold or greater rise in antibody titre against SARS-CoV between an acute serum specimen and a convalescent serum specimen (paired sera), tested simultaneously

Reference:

1- WHO Recommended surveillance standards (second edition – October 1999) – WORLD HEALTH ORGANISATION / Department of Communicable Disease – surveillance and Response

2- Surveillance case definitions for Notifiable diseases in Sri Lanka – Epidemiology Unit / Ministry of Health – 2005.

3- www.who.int / health topic