CASE DEFINITION FOR NOTIFIABLE DISEASES IN MALDIVES 2014

Health Protection Agency
Male' Republic of Maldives

Contents

1- Case definitions based on communicable diseases

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
HPA	Health Protection Agency
IF	Indirect Immunofluorescence
IgG	Immunoglobulin G
IgM	Immunoglobulin M
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 all 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 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.

Case definitions based on communicable diseases

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 nonpolio 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 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 HPA to WHO reference laboratory for confirmation. AFP cases must be reported to HPA 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) (ICD 10: B 01)

Surveillance Case Definition:

An illness with acute onset of diffuse (generalized) papulovesicular rash without other apparent cause[1]

Laboratory Criteria for diagnosis

- Isolation of varicella virus from a clinical specimen, or
- Varicella antigen detected by direct fluorescent antibody test, or
- Varicella-specific nucleic acid detected by polymerase chain reaction (PCR), or
- Significant rise in serum anti-varicella immunoglobulin G (IgG) antibody level by any standard serologic assay.[2]

Case Classification:

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

CONFIRMED: An acute illness with diffuse (generalized) maculopapulovesicular rash, AND

- Epidemiologic linkage to another confirmed case, OR
- Laboratory confirmation by any of the following:
  - Isolation of varicella virus from a clinical specimen, OR

- Varicella antigen detected by direct fluorescent antibody test, OR
- Varicella-specific nucleic acid detected by polymerase chain reaction (PCR), OR
- Significant rise in serum anti-varicella immunoglobulin G (IgG) antibody level by any standard serologic assay.[3]

CHIKUNGUNYA

Surveillance Case Definition:

Acute onset of fever >38.5°C (101.3ºF) and severe arthralgia/arthritis not explained by other medical conditions[4]

Laboratory criteria for diagnosis: at least one of the following tests in the acute phase:

- Virus isolation
- Presence of viral RNA by RT-PCR
- Presence of virus specific IgM antibodies in single serum sample collected in acute or convalescent stage.
- Four-fold rising of CHIKV-specific antibody titers in samples collected at least three weeks apart [5]

Case Classification:

SUSPECTED: Not applicable

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

CONFIRMED: a patient meeting the laboratory criteria, irrespective of the clinical presentation[6]

CHOLERA (ICD 10: *A00*)

Surveillance Case Definition:

Severe dehydration or death from acute watery diarrhea 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.

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)

Case Classification:

SUSPECTED: A case that meets with the clinical case definition

CONFIRMED: A suspected case that is laboratory confirmed

DENGUE

DENGUE FEVER (DF): (ICD 10: A 90)

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/ Bone pain
- rash

- haemorrhagic manifestation (petechiae and positive tourniquet test)
- leukopenia. (wbc ≤5000 cells/mm3).
- Thrombocytopenia (platelet count <150 000 cells/mm3) and,
- Rising haematocrit (5 – 10%).[7]

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:

- Supportive serology on single serum sample: titre ≥1280 with haemagglutination inhibition test, comparable IgG titre with enzyme-linked immunosorbent assay, or tasting positive in IgM antibody test.
- Occurrence at the same location and time as confirmed cases of dengue fever.[8]

CONFIRMED: Probable case and at least one of the following:

- Isolation of dengue virus from serum or CSF
- Fourfold or greater increase in serum IgG (by haemagglutination inhibition test) or increase in IgM antibody specific to dengue virus.
- Detection of dengue virus or antigen in tissue, serum or cerebrospinal fluid by immunohistochemistry,immunofluorescence or enzyme-linked immunosorbent assay.
- Detection of dengue virus genomic sequences by reverse transcription-polymerase chain reaction.[9]

DENGUE HAEMORRHAGIC FEVER (DHF): (ICD 10: A 91)

A probable case of dengue and haemorrhagic tendency evidenced by all of following:-

- Acute onset of fever of two to seven days duration.

- Haemorrhagic manifestations, shown by any of the following: positive tourniquet test, petechiae, ecchymoses or purpura, or bleeding from mucosa, gastrointestinal tract, injection sites, or other locations.
- Platelet count ≤100 000 cells/mm^3
- Objective evidence of plasma leakage due to increased vascular permeability shown by any of the following:
    - Rising haematocrit/haemoconcentration ≥20% from baseline or decrease in convalescence, or
    - Evidence of plasma leakage such as pleural effusion, ascites or hypoproteinaemia/albuminaemia.[10]

DENGUE SHOCK SYNDROME (DSS): **(ICD 10: A 91)**

Criteria for dengue haemorrhagic fever as above with signs of shock:

- Tachycardia, cool extremities, delayed capillary refill, weak pulse, lethargy or restlessness which may be a sign of reduced brain perfusion
- Pulse pressure ≤20 mmHg with increased diastolic pressure, e.g. 100/80 mmHg.
- Hypotension by age, defined as systolic pressure <80 mmHg for those aged <5 years or 80 to 90 mmHg for older children and adults.[11]
-

***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

Acute watery diarrhoea (passage of 3 or more loose or watery stools in the past 24 hours) with or without dehydration.*
*this definition excludes cholera *(refer to cholera definition)*

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.

Laboratory criteria for diagnosis

AMOEBIC DYSENTRY: Any one of the following:

- Demonstration of cysts or trophozoites of Entamoeba histolytica in stool
- Demonstration of trophozoites in tissue biopsy or ulcer scrapings by culture or histopathology

BACILLARY DYSENTRY: Isolation of Shigella spp. from stool or rectal swab specimens.[12]

Case Classification:

SUSPECTED: A case compatible with the surveillance case definition.

PROBABLE: Not applicable

CONFIRMED:

AMOEBIC DYSENTRY: A case that is compatible with the clinical and laboratory criteria of amoebic dysentry.

BACILLARY DYSENTRY: A case that is compatible with the clinical and laboratory criteria of bacillary dysentery.[13]

DIPHTHERIA (ICD 10: A 36)

Surveillance Case Definition:

An illness characterised by laryngitis **or** pharyngitis **or** tonsillitis, **and** an adherent membrane of the tonsils, pharynx and/or nose[14]

Laboratory criteria for diagnosis

Isolation of *Corynebacterium diphtheriae* from a clinical specimen, **or** fourfold or greater rise in serum antibody (but only if both serum samples were obtained before the administration of diphtheria toxoid or antitoxin)[15]

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.

ENCEPHALITIS (ICD 10: G04)

Surveillance Case Definition:

Any person with altered mental state (altered level of consciousness, agitation,lethargy) for longer than 24 hours and displaying two or more of the following six features:

- Fever >38^{o}C or history of fever
- Seizures and/or focal neurological findings (with evidence of brain parenchyma involvement)
- Cerebrospinal fluid (CSF) pleocytosis with predominant lymphocytes and/or elevated protein with a negative Gram stain and culture
- Abnormal EEG findings indicative of encephalitis
- Abnormal neuroimaging findings compatible with encephalitis
- No alternative diagnosis (microbiological or non-infectious)[16]

Laboratory criteria

At least ONE of the following three criteria:

- Detection of viral nucleic acid in CSF by PCR
- Culture of virus from CSF
- Serological evidence of acute infection with a virus known to cause viral encephalitis[17]

Case Classification:

SUSPECTED: A case that is compatible with the surveillance case definition.[18]

PROBABLE: Not Applicable.

CONFIRMED: A case that is compatible with the surveillance case definition and laboratory criteria.[19]

FILARIA (LYMPHATIC) (ICD 10: B74)

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 (ICD 10: A 05.9)

Surveillance Case Definition:

Acute onset of vomiting and / or diarrhea and / or other symptoms associated with ingestion of food.

Food poisoning may also be presented with neurological symptoms such as paresthesias, motor weakness and cranial nerve palsies.[20]

Laboratory criteria for diagnosis

- Isolation of pathogen or identification of non-microbiological agent from specimen.[21]

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.

FOOD POISONING OUTBREAK

Surveillance Case Definition:

An incident in which two or more persons experience a similar illness after ingestion of a common food, and epidemiological analysis implicates the food as the source of the illness. (Exception: one person having chemical poisoning or biochemical poisoning constitutes an outbreak.)[22]

Laboratory criteria for diagnosis

Food poisoning organism or toxin detected from patient's clinical specimens or epidemiologically implicated food specimens (e.g. food remnant or sample from the same batch of food), provided that the patient's clinical picture is compatible with the presentation of the causative agent. This confirms the diagnosis of food-borne illness.[23]

Case Classification:

PROBABLE OUTBREAK: A clinically and epidemiologically compatible illness without laboratory confirmation.
CONFIRMED OUTBREAK: A clinically and epidemiologically compatible illness with EITHER

- Laboratory criteria of causative agent; OR
- Epidemiological linkage to another confirmed outbreak[24]

HAEMOPHILUS INFLUENZAE DISEASE (INVASIVE)

(ICD 10: A49.2, G00.0)

Surveillance Case Definition:

Invasive disease caused by H. influenzae type b (Hib) can produce several clinical syndromes including meningitis, bacteraemic pneumonia, septicaemia, epiglottitis, septic arthritis and osteomyelitis. [25]

Laboratory criteria for diagnosis

Any one of the following:

- Isolation of H. influenzae type b from a normally sterile site (e.g. blood or cerebrospinal fluid (CSF) or, less commonly, joint, pleural, or pericardial fluid)
- Detection of Hib antigen from CSF in a patient with laboratory evidence of bacterial meningitis[26]

Case Classification:

SUSPECTED: Not applicable

PROBABLE: Not applicable

CONFIRMED: A clinically compatible case that is laboratory confirmed.[27]

HAND FOOT AND MOUTH DISEASE (ICD 10: B08.4)

Surveillance Case Definition:

Febrile illness with papulovesicular rash on palms and soles, with or without vesicles/ulcers in the mouth. Rash may occasionally be maculopapular without vesicular lesion, and may also involve the buttocks, knees or elbows, particularly in younger children and infants.[28]

Case Classification:

SUSPECTED: A case that meets the surveillance case definition.

PROBABLE: A suspected case that has not been confirmed by a laboratory, but is geographically (schools,community,etc.) and temporally (within 12 weeks) related to a laboratory-confirmed case.

CONFIRMED: A suspected case with positive laboratory result for Human Enteroviruses that cause HFMD.[29]

HERPANGINA *(ICD 10:* B08.5*)*

Surveillance Case Definition:

Febrile illness with multiple oral ulcers on the posterior parts of the oral cavity.[30]

Case Classification:

SUSPECTED: A case that meets the surveillance case definition.

PROBABLE: A suspected case that has not been confirmed by a laboratory, but is geographically (schools,community,etc.) and temporally (within 12 weeks) related to a laboratory-confirmed case.
CONFIRMED: A suspected case with positive laboratory conformation.

HEPATITIS (VIRAL) (B15-B17)

Hepatitis A *(ICD 10: B15.9)*

Surveillance Case Definition:

Acute illness typically including fever, malaise, extreme fatigue, anorexia, nausea, acute jaundice and right upper quadrant tenderness with raised alanine aminotransferase more than 2.5 times normal[31]

Laboratory criteria for diagnosis:

Positive IgM antibody to Hepatitis A virus (anti HAV).[32]

Case Classification:

SUSPECTED: A case that is compatible with the surveillance case definition[33]

PROBABLE: Not applicable

CONFIRMED: A suspected case that is laboratory-confirmed.[34] OR a case compatible with the clinical description in a person who has an epidemiological link (i.e. household or sexual contact with an infected person during the 15-50 days before the onset of symptoms) with a laboratory-confirmed case of hepatitis A[35]

Hepatitis B *(ICD 10: B 16.9):*

Surveillance Case Definition:

- Acute illness typically including acute jaundice, dark urine, anorexia, malaise, extreme fatigue, and right upper quadrant tenderness with raised alanine aminotransferase more than 2.5 times normal.
- Chronic infection may be asymptomatic or symptomatic[36]

Laboratory criteria for diagnosis:
Acute: HBsAg or IgM anti-HB core- positive
Chronic: HBsAg positive > 6months[37]

SUSPECTED: A case that is compatible with the surveillance case definition[38]

PROBABLE: Not applicable

CONFIRMED: A suspected case that is laboratory-confirmed [39]

ACUTE VIRAL HEPATITIS C, D & E *(ICD 10: B17.0, B17.1, and B17.2)*

Surveillance Case Definition:

An acute illness typically including acute jaundice, dark urine, anorexia, malaise, extreme fatigue and right upper quadrant tenderness. Biological signs include increased urine urobilonogen and >2.5 times the upper limit of serum alanine aminotransferase[40]

Laboratory criteria for diagnosis:
- Hepatitis Non A & B: - IgM anti-HAV and IgM anti-HBc (or HBs Ag) negative.
- Hepatitis C: - Anti-HCV positive
- Hepatitis D: - HBs Ag positive or IgM anti-HBc positive + anti-HDV positive (only as co-infection or superinfection of Hepatitis B.
- Hepatitis E: - IgM anti- HEV positive.[41]

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

PROBABLE: Not applicable

CONFIRMED: A suspected case that is laboratory-confirmed.[42]

INFLUENZA *(ICD 10: J 10)*

Surveillance Case Definition: Any person with the following clinical syndrome:

Influenza-like illness (ILI)

- Sudden onset of symptoms

AND

- at least one of the following four systemic symptoms:
  - Fever or feverishness
  - Malaise
  - Headache
  - Myalgia

AND

- at least one of the following three respiratory symptoms:
  - Cough
  - Sore throat
  - Shortness of breath[43]

Laboratory criteria for diagnosis: At least one the following four:

- Isolation of influenza virus from a clinical specimen
- Detection of influenza virus nucleic acid in a clinical specimen
- Identification of influenza virus antigen by DFA test in a clinical specimen
- Influenza specific antibody response (four fold or greater rise)

Subtyping of the influenza isolate should be performed, if possible[44]

Epidemiological criteria: An epidemiological link by human to human transmission.

Case Classification:

SUSPECTED: Any person meeting the surveillance case definition criteria (ILI)

PROBABLE: Any person meeting the surveillance case definition criteria (ILI) and with an epidemiological link

CONFIRMED: Any person meeting the surveillance case definition criteria (ILI) and the laboratory criteria[45]

LEPROSY (ICD 10: A 30)

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

Laboratory criteria for confirmation

Alcohol-acid-fast bacilli in skin smears (made by the scrape-incision method).[46]

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

LEPTOSPIROSIS (ICD 10: A27)

Surveillance Case Definition:

Acute febrile illness with headache, myalgia and prostration associated with any of the following symptoms:

- conjunctival suffusion
- meningeal irritation
- anuria or oliguria and/or proteinuria
- jaundice

- haemorrhages (from the intestines; lung bleeding is notorious in some areas)
- cardiac arrhythmia or failure
- skin rash

and a history of exposure to infected animals or an environment contaminated with animal urine.

Other common symptoms include nausea, vomiting, abdominal pain, diarrhoea, arthralgia.[47]

Laboratory criteria for diagnosis

- Isolation (and typing) from blood or other clinical materials through culture of pathogenic leptospires
- Positive serology, preferably Microscopic Agglutination Test (MAT), using a range of Leptospira strains for antigens that should be representative of local strains[48]

Case Classification:

SUSPECTED: A case that meets the surveillance case definition[49]

PROBABLE: Not applicable

CONFIRMED: A suspect case that is confirmed in a competent laboratory.[50]

MALARIA (ICD 10: B50-54)

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.

Untreated or complicated Malaria (P. falciparum infections) can lead to cerebral malaria and other neurological features like coma & generalized convulsions, renal failure, jaundice and hepatic dysfunction, pulmonary oedema, hypotension & circulatory collapse, normocytic anaemia & blackwater fever (haemoglobinaemia), hypoglycaemia, lactic acidosis, septicaemia, disseminated intravascular coagulation (DIVC), fluid and electrolyte imbalance, hyperparasitemia and death.[51]

Laboratory criteria for diagnosis

Demonstration of malaria parasites in blood films.

Case Classification:

Confirmed uncomplicated malaria: A patient with symptoms and/or signs of malaria without complication but with laboratory confirmation of diagnosis.[52]

Confirmed severe or complicated malaria: A laboratory confirmed case of malaria presenting with one or more of its complication as listed above.[53]

MEASLES (ICD 10: B 05)

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)

Laboratory criteria:

Any one of the following:

- Positive serologic test for measles IgM antibody
- four-fold increase in measles antibody titre

- Isolation of measles virus from a clinical specimen
- PCR positive for measles virus in clinical specimen[54]

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

MENINGITIS (ICD 10: A87, G00)

Surveillance Case Definition:

Any person with an acute illness with meningeal symptoms (stiff neck, altered consciousness, and headache) AND fever> 38.5C°.[55] In patients <1 year, suspect meningitis when fever accompanied by bulging fontanelle.

Laboratory criteria for confirmed viral meningitis

Raised cerebrospinal fluid white cell count AND one of the following three:

- Isolation of a viral pathogen from cerebrospinal fluid
- Detection of viral nucleic acid in cerebrospinal fluid
- Serological evidence of infection with a virus known to cause viral meningitis[56]

Laboratory criteria for probable viral meningitis

Raised cerebrospinal fluid white cell count AND isolation of a viral pathogen known to cause viral meningitis from a site other then cerebrospinal fluid[57]

Laboratory criteria for confirmed bacterial meningitis

At least one of the following two:

- Isolation of a bacterial species from the cerebrospinal fluid (CSF)
- Detection of a bacterial species nucleic acid from CSF

Laboratory criteria for probable viral meningitis

At least one of the following two:

- Detection of bacteria in CSF by microscopy e.g. Gram stain
- CSF white cell count (WCC) differential, protein and glucose levels consistent with bacterial meningitis

Case Classification:

SUSPECTED: A case that meets the surveillance case definition

PROBABLE VIRAL MENINGITIS: Any person meeting the clinical criteria and the laboratory criteria for probable viral meningitis but with no evidence of bacterial, fungal or parasitic meningitis [58]

PROBABLE BACTERIAL MENINGITIS: Any person meeting the clinical criteria and the laboratory criteria for probable bacterial meningitis[59]

CONFIRMED VIRAL MENINGITIS: Any person meeting the clinical and the laboratory criteria for case confirmation of viral meningitis[60]

CONFIRMED BACTERIAL MENINGITIS: Any person meeting the laboratory criteria for a confirmed case of bacterial[61]

MUMPS (ICD 10: B 26.9)

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 clinically compatible illness that is EITHER:-

- Laboratory confirmed; OR
- Epidemiologically linked to a confirmed case[62]

Laboratory criteria for diagnosis

Any one of the following:

- Positive serologic test for mumps IgM antibody
- ≥ four-fold increase in mumps antibody titre
- Isolation of mumps virus from a clinical specimen, including throat washings, saliva, urine and cerebrospinal fluid
- PCR positive for mumps virus in clinical specimen[63]

NEONATAL TETANUS (ICD 10: A 33)

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.

Laboratory criteria for diagnosis

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

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.

PLAGUE (ICD 10: A20.9)

Surveillance Case Definition:

Disease characterized by rapid onset of fever, chills, headache, severe malaise, prostration, that manifest in one or more of the following clinical forms:[64]

- Bubonic form (plague): Regional lymphadenitis -extreme painful swelling of lymph nodes (buboes)[65]
- Pneumonic form; cough with blood-stained sputum, chest pain, difficult breathing
- Septicaemic form: Both forms above can progress to a septicaemia with toxaemia. Sepsis without evident buboes rarely occurs[66]

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.

Case Classification:

SUSPECTED: A case compatible with the surveillance case definition.

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.

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.

Case Classification:

SUSPECTED: Any person meeting the surveillance case definition.

PROBABLE: Any person meeting the surveillance case definition and having X-ray evidence of pneumonia

CONFIRMED: Any person meeting the surveillance case definition and laboratory criteria.

RABIES (ICD 10: A82)

Surveillance Case Definition:

Rabies is an acute neurological syndrome (encephalomyelitis) dominated by forms of hyperactivity or paralytic syndromes that almost always progresses towards coma and death, usually by respiratory failure, within 7-10 days after the first symptom if no intensive care is instituted. Other clinical symptoms include dysphagia, hydrophobia and convulsions.[67]

Laboratory criteria for diagnosis:

- Detection of rabies viral antigens by direct fluorescent antibody (FA) in clinical specimens, preferably brain tissue (post mortem) or from skin or corneal smear (ante mortem).
- FA positive after inoculation of brain tissue, saliva, cerebrospinal fluid (CSF) in cell culture, in mice or suckling mice.
- Isolation of rabies virus from clinical specimens and conformation of the rabies viral antigens by direct fluorescent antibody testing.[68]

Case Classification:

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

PROBABLE: suspected case plus a history of contact or being bitten by a rabid animal.

CONFIRMED: A probable/suspected case that is laboratory-confirmed.[69]

ROTAVIRUS INFECTION (ICD 10: A08.0)

Surveillance Case Definition:

Any person with fever

AND at least one of the following two:

- Diarrhoea
- Vomiting[70]

Laboratory criteria for diagnosis: At least one of the following four:

- Detection of rotavirus by antigen assay
- Detection of rotavirus-specific RNA
- Detection of rotavirus by electron microscopy
- Isolation of rotavirus[71]

Epidemiological criteria:

At least one of the following two:

- Human to human transmission
- Exposure to a common source[72]

Case Classification:

SUSPECTED: Not applicable.

PROBABLE: Any person meeting the surveillance case definition and with an epidemiological link to a confirmed case.

CONFIRMED: Any person meeting the laboratory criteria. [73]

RUBELLA (ICD 10: B 06)

Surveillance Case Definition:

Any person with sudden onset of generalised maculo-papular rash

AND

At least one of the following five:

- Cervical adenopathy
- Sub-occipital adenopathy
- Post-auricular adenopathy
- Arthralgia
- Arthritis[74]

Laboratory criteria for diagnosis

- Laboratory criteria for case confirmation, at least one of the following three:
  - Isolation of rubella virus from a clinical specimen
  - Detection of rubella virus nucleic acid in a clinical specimen
  - Rubella virus specific antibody response (IgG) in serum or saliva[75]
- Laboratory criteria for probable case
  - Rubella virus specific antibody response (IgM)[76]

Case Classification:

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

PROBABLE: A case that meets the surveillance case ndefinitions and with at least one of the following two:

- Meeting the laboratory criteria for a probable case
- An epidemiological link[77]

CONFIRMED: Any person not recently vaccinated and meeting the laboratory criteria for case confirmation.[78]

SCRUB TYPHUS (ICD 10 : A75.3)

Surveillance Case Definition:

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 maculo-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.[79]

* 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[80]

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 Immunoperoxidase (IP)
or 1:10 dilution or higher

TETANUS (ICD 10: A 34, A35)

Surveillance Case Definition:

Any person with at least two of the following three:

- Painful muscular contractions primarily of the masseter and neck muscles leading to facial spasms known as trismus and "risus sardonicus"
- Painful muscular contractions of trunk muscles
- Generalized spasms, frequently position of opisthotonus[81]

Laboratory criteria for diagnosis

At least one of the following three:

- Isolation of Clostridium tetani from an infection site
- Detection of C. tetani toxin gene from pure culture
- Detection of C. tetani neurotoxin in serum (serum must be taken before administration of anti-toxin)[82]

Case Classification:

SUSPECTED: Not applicable

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

CONFIRMED: Any person meeting surveillance case definition and the laboratory criteria[83]

TUBERCULOSIS (ICD 10: A 15-A19)

Case definitions:

A ***bacteriologically confirmed TB case*** is one from whom a biological specimen is positive by smear microscopy, culture or WRD (such as Xpert MTB/RIF).All such cases should be notified, regardless of whether TB treatment has started.[84]

A ***clinically diagnosed TB case*** is one who does not fulfill the criteria for bacteriological confirmation but has been diagnosed with active TB by a clinician or other medical practitioner who has decided to give the patient a full course of TB treatment. This definition includes cases diagnosed on the basis of X-ray abnormalities or suggestive histology and extrapulmonary cases without laboratory confirmation. Clinically diagnosed cases subsequently found to be bacteriologically

positive (before or after starting treatment) should be reclassified as bacteriologically confirmed.[85]

Bacteriologically confirmed or clinically diagnosed cases of TB are also classified according to:

- anatomical site of disease;
- history of previous treatment;
- HIV status;
- Drug resistance.[86]

Classification based on anatomical site of disease

Pulmonary tuberculosis (PTB) refers to any bacteriologically confirmed or clinically diagnosed case of TB involving the lung parenchyma or the tracheo bronchial tree. Miliary TB is classified as PTB because there are lesions in the lungs. Tuberculous intra-thoracic lymphadenopathy (mediastinal and/or hilar) or tuberculous pleural effusion, without radiographic abnormalities in the lungs, constitutes a case of extrapulmonary TB. A patient with both pulmonary and extrapulmonary TB should be classified as a case of PTB.[87]

Extrapulmonary tuberculosis (EPTB) refers to any bacteriologically confirmed or clinically diagnosed case of TB involving organs other than the lungs, e.g. pleura, lymph nodes, abdomen, genitourinary tract, skin, jointsand bones, meninges.[88]

Classification based on history of previous TB treatment *(patient registration group)*

New patients have never been treated for TB or have taken anti-TB drugs for less than 1 month.[89]

Previously treated patients have received 1 month or more of anti-TB drugs in the past. They are further classified by the outcome of their most recent course of treatment as follows:

Relapse patients have previously been treated for TB, were declared cured or treatment completed at the end of their most recent course of treatment, and are now diagnosed with a recurrent episode of TB (either a true relapse or a new episode of TB caused by reinfection).

Treatment after failure patients are those who have previously been treated for TB and whose treatment failed at the end of their most recent course of treatment.

Treatment after loss to follow-up patients have previously been treated for TB and were declared lost to follow-up at the end of their most recent course of treatment. (These were previously known as treatment after default patients.)

Other previously treated patients are those who have previously been treated for TB but whose outcome after their most recent course of treatment is unknown or undocumented.[90]

Patients with unknown previous TB treatment history do not fit into any of the categories listed above.

New and relapse cases of TB are **incident** TB cases.[91]

Classification based on HIV status

HIV-positive TB patient refers to any bacteriologically confirmed or clinically diagnosed case of TB who has a positive result from HIV testing conducted at the time of TB diagnosis or other documented evidence of enrolment in HIV care, such as enrolment in the pre-ART register or in the ART register once ART has been started[92]

HIV- negative TB patient refers to any bacteriologically confirmed or clinically diagnosed case of TB who has a negative result from HIV testing

conducted at the time of TB diagnosis. Any HIV-negative TB patient subsequently found to be HIV-positive should be reclassified accordingly.[93]

HIV status unknown TB patient refers to any bacteriologically confirmed or clinically diagnosed case of TB who has no result of HIV testing and no other documented evidence of enrolment in HIV care. If the patient's HIV status is subsequently determined, he or she should be reclassified accordingly[94]

Classification based on drug resistance

Monoresistance: resistance to one first-line anti-TB drug only[95]

Polydrug resistance: resistance to more than one first-line anti-TB drug (other than both isoniazid and rifampicin)[96]

Multidrug resistance: resistance to at least both isoniazid and rifampicin[97]

Extensive drug resistance: resistance to any fluoroquinolone and to at least one of three second-line injectable drugs (capreomycin, kanamycin and amikacin), in addition to multidrug resistance[98]

Rifampicin resistance: resistance to rifampicin detected using phenotypic or genotypic methods, with or without resistance to other anti-TB drugs. It includes any resistance to rifampicin, whether monoresistance, multidrug resistance, polydrug resistance or extensive drug resistance.[99]

Treatment outcome definitions

Treatment outcomes for TB patients (excluding patients treated for RR-TB or MDR-TB):

All bacteriologically confirmed and clinically diagnosed TB cases should be assigned an outcome from this list except those with RR-TB or MDR-TB, who are placed on a second-line drug regimen.[100]

Cured: A pulmonary TB patient with bacteriologically confirmed TB at the beginning of treatment who was smear-or culture-negative in the last month of treatment and on at least one previous occasion.[101]

Treatment completed: A TB patient who completed treatment without evidence of failure BUT with no record to show that sputum smear or culture results in the last month of treatment and on at least one previous occasion were negative, either because tests were not done or because results are unavailable.[102]

Treatment failed: A TB patient whose sputum smear or culture is positive at month 5 or later during treatment.[103]

Died: A TB patient who dies for any reason before starting or during the course of treatment.[104]

Lost to follow-up: A TB patient who did not start treatment or whose treatment was interrupted for 2 consecutive months or more.[105]

Not evaluated: A TB patient for whom no treatment outcome is assigned. This includes cases "transferred out" to another treatment unit as well as cases for whom the treatment outcome in unknown to the reporting unit.[106]

Treatment success: The sum of cured and treatment completed.

Outcomes for RR-TB/MDR-TB/XDR-TB patients treated using second-line treatment:

Cured: Treatment completed as recommended by the national policy without evidence of failure AND three or more consecutive cultures taken at least 30 days apart are negative after the intensive phase.[107]

Treatment completed: Treatment completed as recommended by the national policy without evidence of failure BUT no record that three or more consecutive cultures taken at least 30 days apart are negative after the intensive phase. [108]

Treatment failed: Treatment terminated or need for permanent regimen change of at least two anti-TB drugs because of:

- lack of conversion by the end of the intensive phase, or
- bacteriological reversion in the continuation phase after conversion to negative, or
- evidence of additional acquired resistance to fluoroquinolones or second-line injectable drugs, or
- adverse drug reactions (ADRs).[109]

Died: A patient who dies for any reason during the course of treatment.[110]

Lost to follow-up: A patient whose treatment was interrupted for 2 consecutive months or more.[111]

Not evaluated: A patient whom no treatment outcome is assigned. (This includes cases "transferred out" to another treatment unit as well as cases for whom the treatment outcome in unknown to the reporting unit.[112]

Treatment success: The sum of cured and treatment completed.[113]

TYPHOID FEVER (ENTERIC FEVER) (ICD 10: A 01)

Surveillance Case Definition:

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

Laboratory criteria for diagnosis

- Salmonella Typhi isolated from any clinical specimen
- Widal test result of a four-fold or greater rise in the titre of Salmonella Typhi O antibody in paired sera[114]

Case Classification:

SUSPECTED: A patient compatible with the surveillance case definition.

PROBABLE: A clinically compatible case that EITHER:-

- Has Widal test result of titre of Salmonella Typhi O antibody of 200 or greater OR
- Epidemiologically linked to a confirmed case.[115]

CONFIRMED: A suspected case which is laboratory confirmed.

WHOOPING COUGH (ICD 10: *A37.0*)

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*

Laboratory criteria for diagnosis

- Isolation of Bordetella pertussis **or**
- Detection of genomic sequences by means of the polymerase chain reaction (PCR) **or**
- Positive paired serology[116]

Case Classification:

CLINICALLY CONFIRMED: A case that meets the surveillance case definition but is not laboratory-confirmed[117]

LABORATORY CONFIRMED: A case that meets the surveillance case definition and is laboratory-confirmed[118]

YELLOW FEVER (ICD 10: A95.9)

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 -10 days.

Clinical description

The disease is characterized by sudden onset of fever; chills; head, back and muscle pain; nausea and vomiting. These may progress to jaundice and haemorrhagic signs or death within three weeks of onset. The clinical diagnosis of an isolated case of yellow fever is particularly difficult because the symptoms are similar to those of many other diseases, e.g. viral hepatitis, malaria, dengue, typhoid fever, leptospirosis and Ebola disease, and lassa fever. Laboratory confirmation is therefore essential for the differential diagnosis of yellow fever

Laboratory criteria for diagnosis

- Presence of yellow-fever-specific IgM or a fourfold or greater rise in serum IgG levels (acute or convalescent) in the absence of recent yellow fever vaccination
- **Or** isolation of yellow fever virus
- **Or** detection of yellow fever antigen in tissues by immunohistochemistry
- **Or** detection of yellow fever virus genomic sequences in blood or organs by PCR
- **Or** positive postmortem liver histopathology[119]

Case Classification:

SUSPECTED: A case that is characterized by acute onset of fever followed by jaundice within two weeks of the onset of the first symptoms[120]

PROBABLE: Not applicable

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

CASE DEFINITIONS FOR SEXUALLY TRANSMITTED INFECTIONS AND SYNDROMES

ANOGENITAL WARTS (ICD 10: A63.0)

Surveillance Case Definition:

An infection characterized by the presence of visible, exophytic (raised) warty growths on the internal or external genitalia, perineum or perianal region. [cxxi]

Laboratory criteria for diagnosis:

- Histopathologic changes characteristic of human papillomavirus infection in specimens obtained by biopsy or exfoliative cytology or
- Demonstration of virus by antigen or nucleic acid detection in a lesion biopsy [cxxii]

Case Classification:

SUSPECTED: Not applicable

PROBABLE: a clinically compatible case without histopathologic diagnosis and without microscopic or serologic evidence that the growth is the result of secondary syphilis.[cxxiii]

CONFIRMED: a clinically compatible case that is laboratory confirmed[cxxiv]

CHANCROID (ICD 10: A51)

Surveillance Case Definition:

Any person with the following clinical picture: chancroid is a sexually transmitted disease characterized by painful genital ulceration and inflammatory inguinal adenopathy [cxxv]

Laboratory criteria for diagnosis: Isolation of H. ducreyi from a clinical specimen

Case Classification:

SUSPECTED: Not applicable

PROBABLE: Clinical compatible case with the exclusion presence of:-

- Primary syphilis by dark-field examination of exudates or by serological test for syphilis performed at least 7 days after onset of ulcer
- Herpes genitalis (painful grouped erosions/ vesicles) [cxxvi]

CONFIRMED: A case that meets the surveillance case definition and is laboratory confirmed by the isolation of H.ducreyi

CHLAMYDIA TRACHOMATIS INFECTION (ICD 10: A56)

Surveillance Case Definition:

Infection with Chlamydia trachomatis may result in urethritis, epididymitis, cervicitis, acute salpingitis, or other syndromes when sexually transmitted; however, the infection is often asymptomatic in women. Perinatal infections may result in inclusion conjunctivitis and pneumonia in newborns. Other syndromes caused by C. trachomatis include lymphogranuloma venereum and trachoma.

Laboratory criteria for diagnosis:

- Isolation of C. trachomatis by culture or
- Demonstration of C. trachomatis in a clinical specimen by detection of antigen or nucleic acid

Case Classification:

SUSPECTED: Not applicable

PROBABLE: Not applicable

CONFIRMED: a case that is laboratory confirmed

GENITAL HERPES (ICD 10: A60.0, A60.1)

Surveillance Case Definition:
A condition characterized by visible, painful genital or anal lesions. [cxxvii]

Laboratory criteria for diagnosis:
A positive culture or demonstration of HSV-specific DNA by nucleic acid tests in blister/ulcer exudates [cxxviii]

Case Classification:

SUSPECTED: Not applicable

PROBABLE: A history of one or more previous episodes of similar genital lesions or blisters[cxxix]

CONFIRMED: a case that is laboratory confirmed

GRANULOMA INGUINALE (ICD 10: A58)

Surveillance Case Definition:
A slowly progressive ulcerative disease of the skin and lymphatics of the genital and perianal area caused by infection with Calymmatobacterium granulomatis. A clinically compatible case would have one or more painless or minimally painful granulomatous lesions in the anogenital area.[cxxx]

Laboratory criteria for diagnosis:

Demonstration of intracytoplasmic Donovan bodies in Wright or Giemsa-stained smears or biopsies of granulation tissue [cxxxi]

Case Classification:

SUSPECTED: Not applicable

PROBABLE: Not applicable

CONFIRMED: a clinically compatible case that is laboratory confirmed

GONORRHEA (ICD 10: A54)

Surveillance Case Definition:

A sexually transmitted infection commonly manifested by urethritis, cervicitis, or salpingitis. Infection may be asymptomatic.[cxxxii]

Case Classification:

SUSPECTED: Not applicable

PROBABLE: Microscopic demonstration of Gram-negative intracellular diplococci in a sample from the endocervix or urethra or rectum[cxxxiii]

CONFIRMED: Isolation by culture of oxidase positive, Gram-negative intra-cellular diplococci confirmed by sugar utilization or demonstration of Neisseria gonorrhoeae specific DNA in a clinical specimen (from the endocevix, urethra, rectum or pharynx) by a properly evaluated nucleic acid detection test.[cxxxiv]

LYMPHOGRANULOMA VENEREUM (ICD 10: A55)

Surveillance Case Definition:

Infection with L1, L2, or, L3 serovars of Chlamydia trachomatis may result in a disease characterized by genital lesions, suppurative regional lymphadenopathy, or hemorrhagic proctitis. The infection is usually sexually transmitted [cxxxv]

Laboratory criteria for diagnosis:

- Isolation of C. trachomatis, serotype L1, L2, or L3 from clinical specimen, or
- Demonstration by immunofluorescence of inclusion bodies in leukocytes of an inguinal lymph node (bubo) aspirate, or
- Positive microimmunofluorescent serologic test for a lymphogranuloma venereum strain of C. trachomatis [cxxxvi]

Case Classification:

SUSPECTED: Not applicable

PROBABLE: a clinically compatible case with one or more tender fluctuant inguinal lymph nodes or characteristic proctogenital lesions with supportive laboratory findings of a single C. trachomatis complement fixation titer of >64

CONFIRMED: a clinically compatible case that is laboratory confirmed

SYPHILIS

Syphilis is a complex sexually transmitted disease that has a highly variable clinical course. Classification by a clinician with expertise in syphilis may take precedence over the following case definitions developed for surveillance purposes.

SYPHILIS, PRIMARY **(ICD 10: A51.0, A51.1)**

Surveillance Case Definition:

A stage of infection with Treponema pallidum characterized by one or more chancres (ulcers); chancres might differ considerably in clinical appearance.

Laboratory criteria for diagnosis:

Demonstration of T. pallidum in clinical specimens by darkfield microscopy, direct fluorescent antibody (DFA-TP), or equivalent methods [cxxxvii]

Case Classification:

SUSPECTED: Not applicable

PROBABLE: a clinically compatible case with one or more ulcers (chancres) consistent with primary syphilis and a reactive serologic test (nontreponemal: Venereal Disease Research Laboratory [VDRL] or rapid plasma reagin [RPR]; treponemal: fluorescent treponemal antibody absorbed [FTA-ABS] or microhemagglutination assay for antibody to T. pallidum [MHA-TP]).

CONFIRMED: a clinically compatible case that is laboratory confirmed.

SYPHILIS, SECONDARY (ICD 10: A51.3, A51.4)

Surveillance Case Definition:

A stage of infection caused by T. pallidum and characterized by localized or diffuse mucocutaneous lesions, often with generalized lymphadenopathy. The primary chancre may still be present.

Laboratory criteria for diagnosis:

Demonstration of T. pallidum in clinical specimens by darkfield microscopy, DFA-TP, or equivalent methods [cxxxviii]

Case Classification:

SUSPECTED: Not applicable

PROBABLE: a clinically compatible case with a nontreponemal (VDRL or RPR) titer ≥4

CONFIRMED: a clinically compatible case that is laboratory confirmed.

SYPHILIS, LATENT (ICD 10: A53.0)

Surveillance Case Definition:

A stage of infection caused by T. pallidum in which organisms persist in the body of the infected person without causing symptoms or signs. Latent syphilis is subdivided into early, late, and unknown categories based on the duration of infection.

Case Classification:

SUSPECTED: Not applicable

PROBABLE: no clinical signs or symptoms of syphilis and the presence of one of the following:

- No past diagnosis of syphilis, a reactive nontreponemal test (i.e., VDRL or RPR), and a reactive treponemal test (i.e., FTA-ABS or MHA-TP)
- A past history of syphilis therapy and a current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer

CONFIRMED: Not applicable.

SYPHILIS, EARLY LATENT (ICD 10: A51.5)

Surveillance Case Definition:

A subcategory of latent syphilis. When initial infection has occurred within the previous 12 months, latent syphilis is classified as early latent.

Case Classification:

SUSPECTED: Not applicable

PROBABLE: latent syphilis (see Syphilis, latent) in a person who has evidence of having acquired the infection within the previous 12 months based on one or more of the following criteria:

- Documented seroconversion or fourfold or greater increase in titer of a nontreponemal test during the previous 12 months
- A history of symptoms consistent with primary or secondary syphilis during the previous 12 months
- A history of sexual exposure to a partner who had confirmed or probable primary or secondary syphilis or probable early latent syphilis (documented independently as duration <1 year)
- Reactive nontreponemal and treponemal tests from a person whose only possible exposure occurred within the preceding 12 months

CONFIRMED: Not applicable.

SYPHILIS, LATE LATENT (ICD 10: A52.8)

Surveillance Case Definition:

A subcategory of latent syphilis. When initial infection has occurred >1 year previously, latent syphilis is classified as late latent.

Case Classification:

SUSPECTED: Not applicable

PROBABLE: latent syphilis (see Syphilis, latent) in a patient who has no evidence of having acquired the disease within the preceding 12 months and whose age and titer do not meet the criteria specified for latent syphilis of unknown duration.

CONFIRMED: Not applicable.

SYPHILIS, LATENT OF UNKNOWN DURATION (ICD 10: A53.0)

Surveillance Case Definition:

A subcategory of latent syphilis. When the date of initial infection cannot be established as having occurred within the previous year and the patient's age and titer meet criteria described below, latent syphilis is classified as latent syphilis of unknown duration.

Case Classification:

SUSPECTED: Not applicable

PROBABLE: latent syphilis that does not meet the criteria for early latent syphilis, and the patient is aged 13–35 years and has a nontreponemal titer ≥32.

CONFIRMED: Not applicable.

NEUROSYPHILIS (ICD 10: A50.4, A52.1-52.3)

Surveillance Case Definition:

Evidence of central nervous system infection with T. pallidum.

Laboratory criteria for diagnosis:

A reactive serologic test for syphilis and reactive VDRL in cerebrospinal fluid (CSF).

Case Classification:

SUSPECTED: Not applicable

PROBABLE: syphilis of any stage, a negative VDRL in CSF, and both of the following:

- Elevated CSF protein or leukocyte count in the absence of other known causes of these abnormalities
- Clinical symptoms or signs consistent with neurosyphilis without other known causes for these clinical abnormalities

CONFIRMED: syphilis of any stage that meets the laboratory criteria for neurosyphilis.

SYPHILIS, CONGENITAL (ICD 10: A50,A50.0-50.9)

Surveillance Case Definition:

A condition caused by infection in utero with Treponema pallidum. A wide spectrum of severity exists, and only severe cases are clinically apparent at birth. An infant or child (aged <2 years) may have signs such as hepatosplenomegaly, rash, condyloma lata, snuffles, jaundice (nonviral hepatitis), pseudoparalysis, anemia, or edema (nephrotic syndrome and/or malnutrition). An older child may have stigmata (e.g., interstitial keratitis, nerve deafness, anterior bowing of shins, frontal bossing, mulberry molars, Hutchinson teeth, saddle nose, rhagades, or Clutton joints).

Laboratory criteria for diagnosis:

Demonstration of T. pallidum by darkfield microscopy, fluorescent antibody, or other specific stains in specimens from lesions, placenta, umbilical cord, or autopsy material

Case Classification:

SUSPECTED: Not applicable

PROBABLE: a condition affecting an infant whose mother had untreated or inadequately treated* syphilis at delivery, regardless of signs in the infant, or an infant or child who has a reactive treponemal test for syphilis and any one of the following:

- Any evidence of congenital syphilis on physical examination
- Any evidence of congenital syphilis on radiographs of long bones
- A reactive cerebrospinal fluid (CSF) venereal disease research laboratory (VDRL)
- An elevated CSF cell count or protein (without other cause)
- A reactive fluorescent treponemal antibody absorbed—19S-IgM antibody test or IgM enzyme-linked immunosorbent assay

CONFIRMED: a case that is laboratory confirmed.

STD SYNDROMS

GENITAL ULCER DISEASE (NON VASCULAR)

Surveillance Case Definition:

An ulcer (a visible break in the skin) on the penis, scrotum or rectum in men, and on the labia, vagina, cervix and rectum in women[cxxxix]

GENITAL ULCER DISEASE (VASCULAR)

Surveillance Case Definition:

Genital or anal vesicle in men or women which is not explained by other medical conditions.

SYNDROME OF LOWER ABDOMINAL PAIN (PELVIC INFLAMMATORY DISEASE) (ICD 10: N73.9)

Surveillance Case Definition:

A clinical syndrome resulting from the ascending spread of microorganisms from the vagina and endocervix to the endometrium, fallopian tubes, and/or contiguous structures. In a female who has lower abdominal pain and who has not been diagnosed as having an established cause other than pelvic inflammatory disease (PID) (e.g., ectopic pregnancy, acute appendicitis, and functional pain), all the following clinical criteria must be present: [cxl]

- Lower abdominal tenderness, and
- Tenderness with motion of the cervix, and
- Adnexal tenderness

In addition to the preceding criteria, at least one of the following findings must also be present:

- Meets the surveillance case definition of *C. trachomatis* infection or gonorrhea
- Temperature >100.4 F (>38.0 C)
- Leukocytosis >10,000 white blood cells/mm3
- Purulent material in the peritoneal cavity obtained by culdocentesis or laparoscopy
- Pelvic abscess or inflammatory complex detected by bimanual examination or by sonography
- Patient is a sexual contact of a person known to have gonorrhea, chlamydia, or nongonococcal urethritis[cxli]

Case Classification:

SUSPECTED: Not applicable

PROBABLE: Not applicable

CONFIRMED: A case that meets the surveillance case definition

SYNDROME OF ACUTE SCROTAL SWELLING

Surveillance Case Definition:
Acute-onset of mostly unilateral testicular pain and swelling, often with tenderness of the epididymis and vas deferens[cxlii] which is not explained by other medical conditions.

SYNDROME OF INGUINAL SWELLING

Surveillance Case Definition:
Swelling and pain in the inguinal region with painful swollen inguinal lymph nodes without genital ulcer and not explained by other medical conditions.

SYNDROME OF OPHTHALMIA NEONATORUM

Surveillance Case Definition:

PROBABLE: Unilateral or bilateral conjunctivitis in a neonate (within 4 weeks of delivery).[cxliii]

CONFIRMED: Unilateral or bilateral conjunctivitis in a neonate (within 4 weeks of delivery) with an ocular specimen that is positive for Neisseria gonorrhoeae or Chlamydia trachomatis[cxliv]

URETHRAL DISCHARGE SYNDROME

Surveillance Case Definition:

A discharge in men (with or without dysuria) seen at the urethral meatus with or without milking/expressing the urethra. Urethral discharge syndrome is commonly caused by Neisseria gonorrhoeae or Chlamydia trachomatis.[cxlv]

VAGINAL DISCHARGE SYNDROME

Surveillance Case Definition:

An abnormal vaginal discharge with change in the quantity, consistency, colour or odour (with or without vulval itching or burning).[cxlvi]

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 (ICD 10: B03)

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 (ICD 10: A80.1, A80.02)

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 fromother 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 (ICD 10: J10-J11.8)

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 infectionswith 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 RTPCR/ 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

Annex 1:

List of Notifiable communicable diseases in Maldives

1. Acute Flaccid Paralysis
2. Acute Respiratory Infection
3. Chickenpox
4. Chikungunya
5. Cholera
6. Conjunctivitis
7. Dengue fever
8. Dengue Haemorrhagic Fever
9. Diarrhoea
10. Diphtheria
11. Dysentry
12. Encephalitis
13. Filaria
14. Hand, Foot and Mouth Disease
15. Infective Hepatitis
16. Leprosy
17. Leptospirosis
18. Malaria
19. Meningitis
20. Measles
21. Mumps
22. Plague
23. Pneumonia
24. Rubella
25. Scrub Typhus
26. Tetanus / Neonatal tetanus
27. Tuberculosis
28. Typhoid Fever
29. Viral Fever
30. Whooping cough
31. Yellow Fever

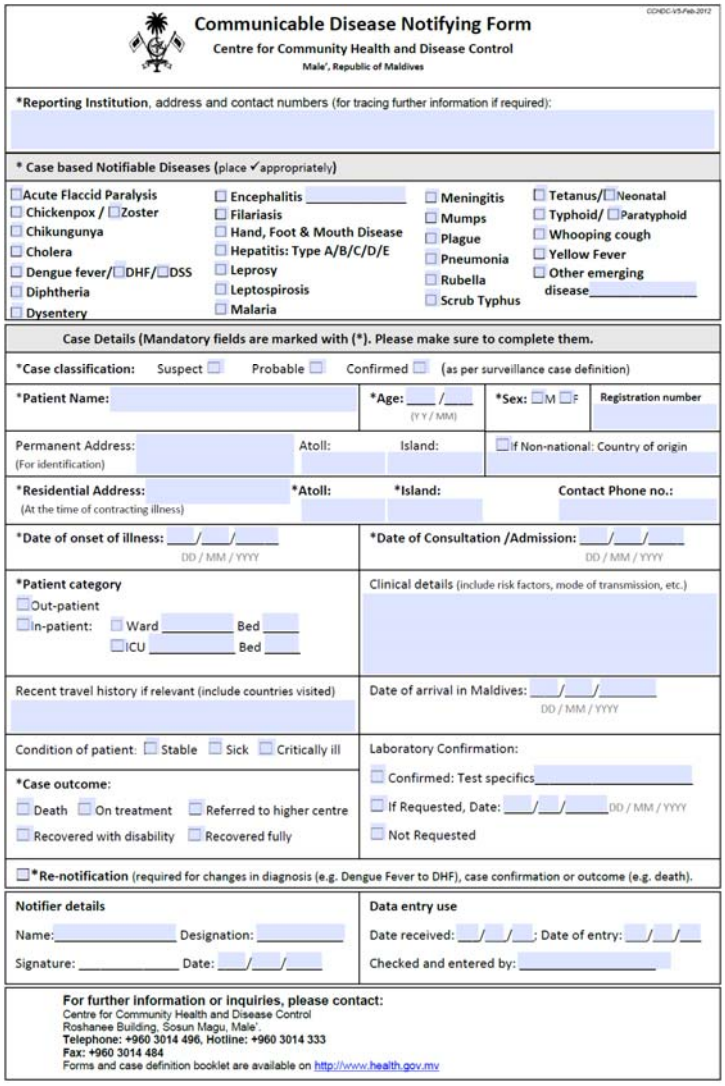
Annex 2:
List of Notifiable communicable diseases in Maldives (with inclusions)

	Disease (with inclusions)	ICD code
1-	Acute Flaccid Paralysis	
2-	Acute Gastroenteritis (AGE) - ADD - AGE - Colitis - Diarrhoea - Dysentery - Enteritis - Gastroenteritis	A09, K52, K52.0, K52.1, K52.2, K52.8, K52.9,
3-	Acute Respiratory Infection - Ac. Bronchitis - Ac. Laryngitis - Ac. Nasopharyngitis - Ac. Pharyngitis - Ac. Sinusitis - Ac. tracheitis - Allergic rhinitis - ARI - Ac. LRI - Common cold - Coryza - Pharyngitis - Rhinitis - Tonsillitis - URI	 J20 J04.0 J00 J02 J01 J04.1 J30, J30.1, J30.2, J30.3, J30.4 J00 J02 J03 J06, J06.9
4-	Chickenpox	B01
5-	Chikungunya	A92.0
6-	Cholera	A00
7-	Conjunctivitis	H10
8-	Dengue fever	A90

9-	Dengue Haemorrhagic Fever	A91
10-	Diarrhoea	
11-	Diphtheria	A36
12-	Dysentry	
13-	Encephalitis	
14-	Filaria	B74
15-	Hand, Foot and Mouth Disease	B08.4
16-	Infective Hepatitis	B15, B16, B17, B17.1, B17.2,
17-	Leprosy	A30.9
18-	Leptospirosis	A27
19-	Malaria	B54
20-	Meningitis	G03.9
21-	Measles	B05
22-	Mumps	B26
23-	Plague	A20
24-	Pneumonia	J18.9
25-	Rubella	B06
26-	Scrub Typhus	A75.3
27-	Tetanus / Neonatal tetanus	A35 / A33
28-	Tuberculosis	
29-	Typhoid Fever	A01.0
30-	Viral Fever	
31-	Whooping cough	A37.0
32-	Yellow Fever	A95.9

Annex 3:

Reporting Forms (Notification slip):



Communicable Disease Notifying Form

Centre for Community Health and Disease Control

Male', Republic of Maldives

CCHDC-V5/Feb-2012

*Reporting Institution, address and contact numbers (for tracing further information if required):

* Case based Notifiable Diseases (place ✓appropriately)

- ☐ Acute Flaccid Paralysis
- ☐ Chickenpox / ☐ Zoster
- ☐ Chikungunya
- ☐ Cholera
- ☐ Dengue fever/ ☐ DHF/ ☐ DSS
- ☐ Diphtheria
- ☐ Dysentery
- ☐ Encephalitis _____
- ☐ Filariasis
- ☐ Hand, Foot & Mouth Disease
- ☐ Hepatitis: Type A/B/C/D/E
- ☐ Leprosy
- ☐ Leptospirosis
- ☐ Malaria
- ☐ Meningitis
- ☐ Mumps
- ☐ Plague
- ☐ Pneumonia
- ☐ Rubella
- ☐ Scrub Typhus
- ☐ Tetanus/ ☐ Neonatal
- ☐ Typhoid/ ☐ Paratyphoid
- ☐ Whooping cough
- ☐ Yellow Fever
- ☐ Other emerging disease_____

Case Details (Mandatory fields are marked with (*). Please make sure to complete them.

*Case classification: Suspect ☐ Probable ☐ Confirmed ☐ (as per surveillance case definition)

*Patient Name: | *Age: ___ /___ (Y Y / MM) | *Sex: ☐ M ☐ F | Registration number

Permanent Address: (For identification) | Atoll: | Island: | ☐ If Non-national: Country of origin

*Residential Address: (At the time of contracting illness) | *Atoll: | *Island: | Contact Phone no.:

*Date of onset of illness: ___/___/____ DD / MM / YYYY

*Date of Consultation /Admission: ___/___/____ DD / MM / YYYY

*Patient category

- ☐ Out-patient
- ☐ In-patient: ☐ Ward _____ Bed ____
- ☐ ICU _____ Bed ____

Clinical details (include risk factors, mode of transmission, etc.)

Recent travel history if relevant (include countries visited)

Date of arrival in Maldives: ___/___/_____ DD / MM / YYYY

Condition of patient: ☐ Stable ☐ Sick ☐ Critically ill

*Case outcome:

- ☐ Death ☐ On treatment ☐ Referred to higher centre
- ☐ Recovered with disability ☐ Recovered fully

Laboratory Confirmation:

- ☐ Confirmed: Test specifics_____
- ☐ If Requested, Date: ___/___/_____ DD / MM / YYYY
- ☐ Not Requested

☐ *Re-notification (required for changes in diagnosis (e.g. Dengue Fever to DHF), case confirmation or outcome (e.g. death).

Notifier details

Name:_____ Designation: _____

Signature: _____ Date: ___/___/____

Data entry use

Date received: ___/___/___; Date of entry: ___/___/___

Checked and entered by: _____

For further information or inquiries, please contact:

Centre for Community Health and Disease Control

Roshanee Building, Sosun Magu, Male'.

Telephone: +960 3014 496, Hotline: +960 3014 333

Fax: +960 3014 484

Forms and case definition booklet are available on http://www.health.gov.mv

Instructions for completing notification forms

The adoption by the 58th World Health Assembly of the revised (2005) International Health Regulations (IHR) provides the legal framework for mandating countries to have a disease surveillance system. Therefore it is Mandatory under the International ***Health Regulations (IHR)*** to **report** communicable diseases.

(*) Questions marked with this asterisk are **mandatory** to complete.

1. Reporting institution name and contact phone number should be in each form. (a seal may be used)
2. Tick the appropriate notifiable disease. The diseases in **bold** in this list should be notified within **24 hours**. For a new emerging disease, i.e. a disease new to Maldives or not frequently seen, specify the disease in the space, and inform by telephone as well. For other diseases not listed, please see notes below.
3. **Case classification**: if uncertain, please check case definitions and confirmatory lab tests with the booklet: ***Case definition for notifiable diseases in Maldives 2008***, available in hospitals and on the Ministry of Health and Family website.
4. Name: as in ID card, passport or work permit card (for non-nationals)
5. Permanent address: as in ID card (and usually in admission/registration documents)
6. **Address of residence** at time of onset of illness: Please specifically ask the patient or care-giver and write the address **where patient lived when the symptoms began**.
7. **Date of onset** = approximate date **when symptoms first began**. Please ask the patient or caregiver if it is not mentioned or not clear in the notes.
8. **Re-notification:** This is required for changes in diagnosis, case confirmation or outcome.

   -Change of diagnosis includes change from DF (Dengue fever) to DHF or DSS.

   -Case confirmation includes change in status i.e. suspect, probable or confirmed according to the case definition, e.g. confirming diagnosis or causative organism by laboratory tests.

   -Case outcome: This is often not known at time of reporting. However, if a patient with the disease dies, develops life-long sequelae or disability, or develops chronic disease status or chronic carrier status, please repeat notification mentioning the new outcome. In case of death, please attach a copy of death certificate and death summary.

   You may use either the previous form, a clear copy of it or a fresh form for re-notification.

The following diseases do not require case-based notification:

- Viral fever
- Diarrhoeal disease (AGE)
- Out-patient Acute Respiratory Infections (ARIs)
- Conjunctivitis

This form need not be completed for these diseases unless you have some particular concern. These diseases are notified by institutions on a daily count basis.

The following diseases have separate forms which are available from CCHDC and on the website

- Acute flaccid paralysis (AFP)
- Tuberculosis
- Measles
- Vaccine preventable diseases
- HIV, STD's
- Food poisoning

These diseases should be informed to CCHDC by **telephone** as soon as possible. You may report it in this form under 'Other emerging diseases' and specify the name, if you wish, particularly when specific forms are not available. However, you should complete and send the disease-specific form also.

For further information or inquiries, please contact:
Centre for Community Health and Disease Control
Roshanee Building, Sosun Magu, Male'.
Telephone: +960 3014 496, Hotline: +960 3014 333
Fax: +960 3014 484
Forms and case definition booklet are available on http://www.health.gov.mv

بسم الله الرحمن الرحيم

Health Protection Agency
Ministry of Health
Male' Maldives

MEASLES CASE INVESTIGATION FORM

For use of HPA
Date: Suspected _____ Discarded: _____ Confirmed:_____
Notification Dates: _____

Instructions: *This form should be completed for each suspected / diagnosed measles case*.

The minimal clinical criteria for each suspected Measles case:
1- Fever over 101 degrees F (38.30C) or HOT and
2- Rash-like illness for over 3 days; and
3- One of the following: cough, runny nose, red or eyes sensitive to light.

CASE IDENTIFICATION:
Name of patient: ---------- Sex: M / F
Address: ---------- Date of Birth & (age): ----------
Atoll / Island: ----------

CLINICAL INFORMATION:	Mark X	Yes	No
Date onset of Rash: ----------	Fever (highest … F/C		
Number of day's rash present: ----------	Runny nose (coryza)		
How many days were symptoms present before rash appeared? ----------	Conjunctivitis		
	Eye sensitive to light		
	Koplik's spots		
	Large lymph nodes		
	Cough		

COMPLICATIONS:

Specify (otitis media, pneumonia, convulsion etc.) ----------

Hospitalized:	Yes	No	
Date hospitalized:			
Did patient die?	Yes	No	If yes date:
			Cause of death:

VACCINATION HISTORY:	**INFORMATION SOUCE:**
Date:	Name of Provider: ----------
If not given, please note here:	Hospital / Clinical: ----------

Please send a copy of this form completed **IMMEDIATELY** to EPI SECTION of HPA
Fax No: 3014484 OR TELEPHONE/CALL: 3014494
Thank you for your co-operation

INVESTIGATOR: **SIGNATURE:**

NAME: **DATE:**

بسم الله الرحمن الرحيم

Health Protection Agency
Ministry of Health
Male' Maldives

NOTIFICATION OF A CASE OF ACUTE FLACCID PARALYSIS

Case Investigation Form

COMPULSORY NOTIFICATION: Please complete all information in full

FOR HPA USE ONLY
Name of Health Facility ---------- No: ---------- Year: ----------
Date received by HPA: ----------

1- IDENTIFICATION

Atoll: ----------
Island: ----------
Ward: ----------
Health Facility: ----------
Name of patient: ----------
Name of Father: ----------
Name of Mother: ----------
Date of birth: ----------
Sex: ----------

2- IDENTIFICATION

Notified by: ----------
Notified Date: ----------
Date Island visited: -------
Date of control measures:

3- TREATMENT AT HEALTH CENTRE / HOSPITAL / PRIVATE CLINIC:

Treated? Yes No Unknown
Date of initiation of treatment: ----------
Name / Address of facility: ----------
Med. Rec. No: ----------

4- INITIAL CLINICAL HISTORY

Onset of signs and symptoms: ----------
Onset of paralysis: ----------

Tick where appropriate:

	Yes	No	Unk		Yes	No	Unk
Fever				Sudden			
Nausea/Vomiting				Flaccid			
Diarrhaea				Asymmetrical			
Constipation				Paralysis progressed more than three days after onset			
Sore throat							
Muscular pain							
Headache				Ascending			
Stiff neck							

5- INVOLVEMENT:

	Yes	No	Unk
Left leg			
Right leg			
Left arm			
Right arm			
Breathing			
Cervical musk			
Facial musk			
Distal			
Proximal			

	Yes	No	Unk
Reflex	-----	-----	-----
Sensitivity	-----	-----	-----

Case died in less than 15 days Yes _____ No _____
If so, Date: _____

6- VACCINATION HISTORY:

	Yes	No	Unk
Vaccinated against polio	-----	-----	-----
Card:	-----	-----	

If no card, no. of doses
Dates: First dose:
Second dose:
Third dose:
Others:

7- CASE INVESTIGATION

	Yes	No	Unk
Patient travelled outside the Atoll / Island in last 30 days?			
Visitors from other villages in last 30 days			
Social gathering / mela in last 30 days			
Other cases in same Atoll / Island			

Give details: ----------

8- FEACAL SPECIMEN:

	Date	P1	P2	P3	WILD	VAX	ENTERO	NEG
First specimen								
Second specimen								

Not collected: ----------

9- FOLLOW-UP CLINICAL EXAMINATION AFTER 60 DAYS:

	Yes	No	Unk
Left leg			
Right leg			
Left arm			
Right arm			
Breathing			
Cervical musk			
Facial musk			
Distal			
Proximal			

COMMENTS:

_____

_____

_____

FINAL CLASSIFICATION Poliomyelities: Yes ---- No ----- Others -----

INVESTIGATOR:

NAME: ---------- Title:

Unit: Address: Phone No:

INVESTIGATOR:
NAME: SIGNATURE: DATE:

ATTENTION:

Please send a copy of this form completed **IMMEDIATELY** to EPI SECTION of HPA
Fax No: 3014484 OR TELEPHONE/CALL: 3014494
Thank you for your co-operation

SEARO Integrated Disease Analysis System (SIDAS)

SEARO Integrated Data Analysis System (SIDAS) is a web based application which serves as a single integrated tool for surveillance, data collection, updating, analysis and dissemination of data on health and related indicators.

SIDAS being a web-based application has the advantage that it can be accessed from anywhere anytime by the authorized users of the system. The salient features of the system include:

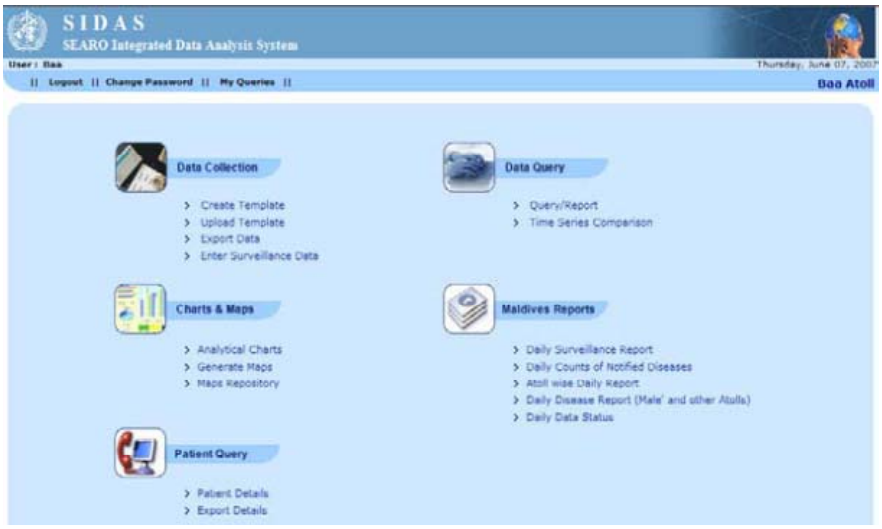
1. Access to only authorized users of the system.
2. Data collection using online (Web based GUI) and offline (MS Excel based templates) modes.
3. Data Values Aggregated from lower Admin levels and Periodicities to the higher one.
4. Facility to maintain case-based patient details
5. Customized Reports for Surveillance data
6. Presentation of data through analytical reports and charts.

How to access the system?

To access the system you need to have internet connectivity and the link to access the system is –

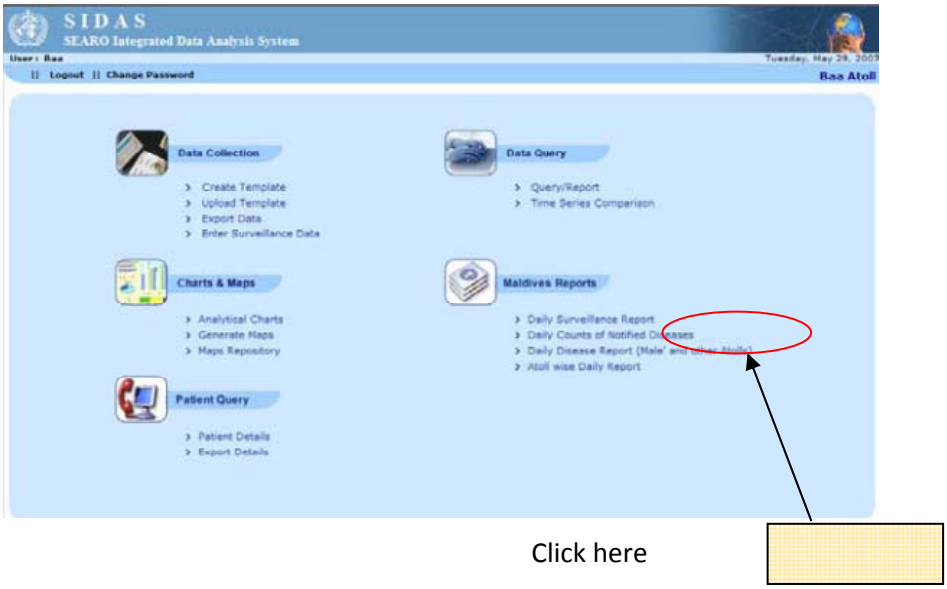
http://www.searo.who.int/sidas1

To use the system, you first need to have a username and password to login into the system. Once you have the username and password, just login as shown below:

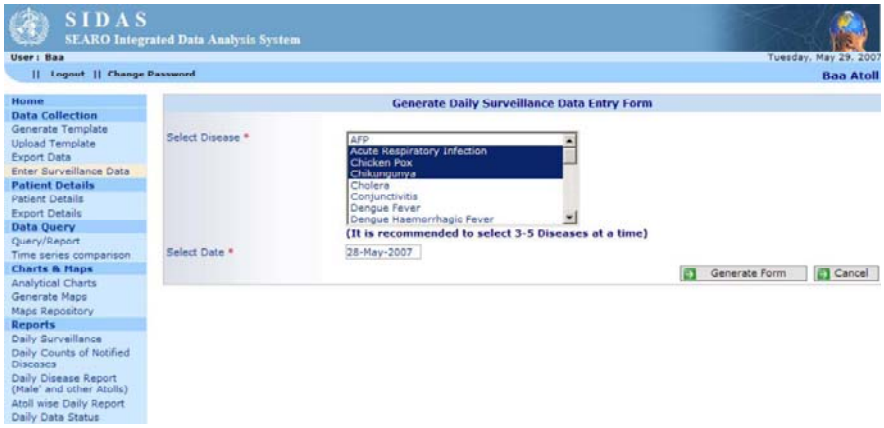


How to enter the daily surveillance data through online form?

Click on the menu option – 'Enter Surveillance Data'



Select the Diseases for which you want to enter the surveillance data and select the date for which the data needs to be entered. And then click on the '**Generate Form**' button.



How to enter case-based patient details?

Click on the menu option – '**Patient Details**'

Click on the '**Add Patient**' button, to open the form to enter case-based patient details.

Annex 4:

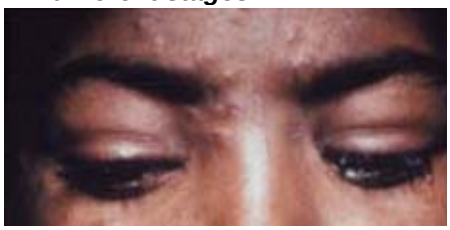
This section shows the differences between the smallpox and chickenpox.

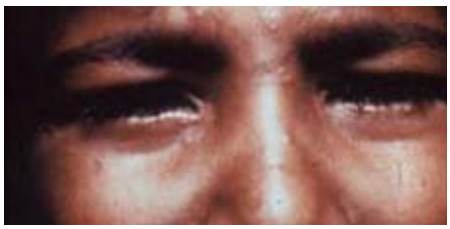
	SMALLPOX	CHICKENPOX
FEVER	2 to 4 days before the rash	At time of rash
RASH Appearance	Pocks at same stage	Pocks in several stages
Development	Slow	Rapid
Distribution	More pocks on arms and legs	More pocks on body
On palms and soles	Usually present	Usually absent

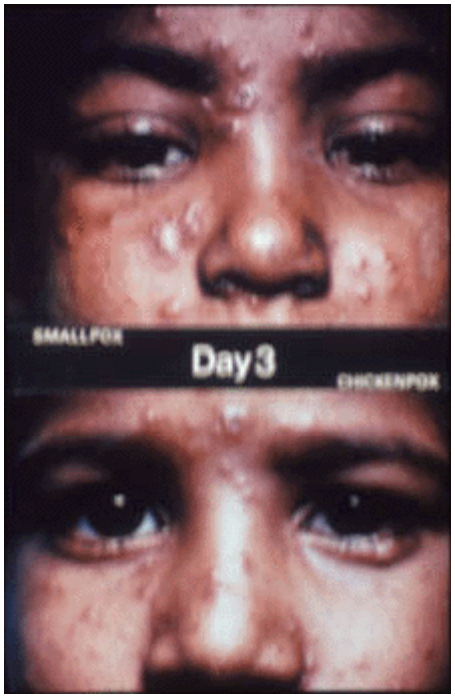
In smallpox, fever is present for 2 to 4 days before the rash begins, while with chickenpox, fever and rash develop at the same time.

Pictures of smallpox and chickenpox in different stages

During the first day and second day, rash it may be impossible, from the rash alone, to differentiate smallpox from chickenpox.



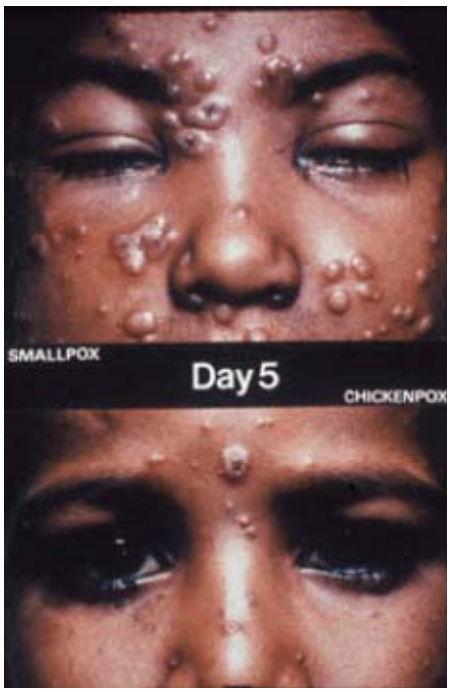




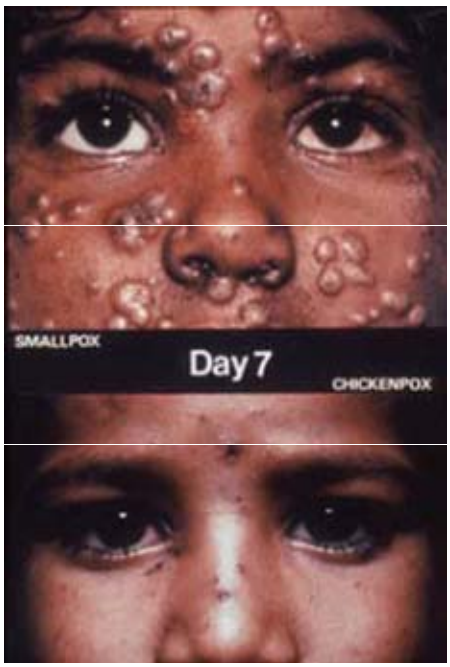
On day3, the rash associated with each of the diseases continues to look very similar.

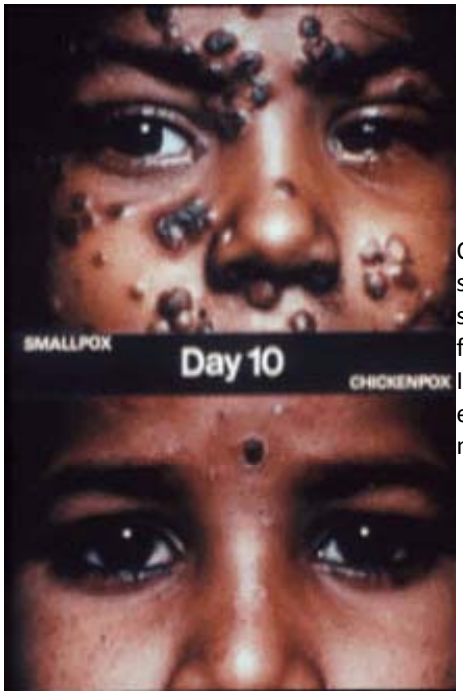
By day 5, it is perfectly clear that the patients have different diseases.

- Chickenpox lesions are small, between 1 and 5 mm, while the smallpox lesions are uniformly larger, between 5 and 10 mm.
- Smallpox lesions are firm and deeply embedded in the skin while the chickenpox is much more superficial.



By day 7, most of the chickenpox lesionshave already formed scabs and some scabs, infact, have already separated,scabs over the smallpox lesions have not yet formed.



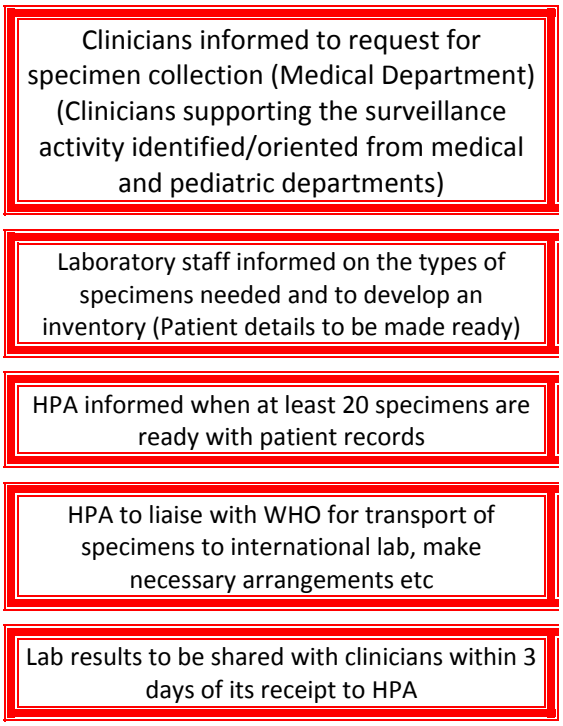


On day 10, most of the chickenpox scabs have fallen off, while the smallpox scabs are just beginning to form.

In chickenpox, the scabs may form as early as day 3 or 4 of rash and normally fall off by day 14.

Annex 5:

Specimen collection for disease surveillance activities



Annex 6:

Specimen collection and storage of Measles and Rubella

1- Timing of blood sampling for measles and rubella IgM

IgM ELISA tests for measles and rubella are more sensitive between days 4 and 28 after the onset of rash.

First blood sample submitted for IgM was collected with four days of rash onset and is negative by ELISA, the laboratory may request a second sample for repeat IgM testing	Collection of second sample 10-20 days after the first sample

2- Collection and handling procedures of samples

Blood should be collected in the following:

- 5 ml for older children and adults and 1 ml for infants and younger children should be adequate.
- if applicable, by finger or heel prick onto filter paper and labeled with the patient's identification and the collection date.
- Blood can be stored at 4 -8^{0}C for up to 24 hours before the serum is separated.

3- *Storage of serum samples*

* Short-term storage of serum samples (1 – 7 days) should be at 4 -8^{0}C.

* Long-term storage of sera should be at or below -20^{0}C

Source: Manual for the laboratory diagnosis of measles and rubella virus infection – second edition (www.who.int)

Reference:

1- WHO Recommended surveillance standards (secondedition – October 1999) – WORLD HEALTH

ORGANISATION / Department of CommunicableDisease – surveillance and Response

2- Surveillance case definitions for Notifiable diseases inSri Lanka – Epidemiology Unit / Ministry of Health –

2005.

3- www.who.int / health topic

Additional references

[1] 2012 Nationally Notifiable Diseases and Conditions and Current Case Definitions - CDC
[2] 2012 Nationally Notifiable Diseases and Conditions and Current Case Definitions - CDC
[3] 2012 Nationally Notifiable Diseases and Conditions and Current Case Definitions - CDC
[4] Proposed case definition of Chikungunya Fever (WHO, SEARO), Preparedness and Response for Chikungunya Virus Introduction in the Americas - CDC - 2011
[5] Proposed case definition of Chikungunya Fever (WHO, SEARO), Preparedness and Response for Chikungunya Virus Introduction in the Americas - CDC – 2011 (p.45-46)
[6] Proposed case definition of Chikungunya Fever (WHO, SEARO),
[7] Comprehensive Guidelines for Prevention and Control of Dengue and Dengue Haemorrhagic Fever-Revised and expanded-WHO-2011
[8] Comprehensive Guidelines for Prevention and Control of Dengue and Dengue Haemorrhagic Fever-Revised and expanded-WHO-2011
[9] Comprehensive Guidelines for Prevention and Control of Dengue and Dengue Haemorrhagic Fever-Revised and expanded-WHO-2011
[10] Comprehensive Guidelines for Prevention and Control of Dengue and Dengue Haemorrhagic Fever-Revised and expanded-WHO-2011
[11] Comprehensive Guidelines for Prevention and Control of Dengue and Dengue Haemorrhagic Fever-Revised and expanded-WHO-2011
[12] Communicable Disease Surveillance Case Definitions - Version 8.9 - 3 June 2013- Department of Health/Hong Kong
[13] Communicable Disease Surveillance Case Definitions - Version 8.9 - 3 June 2013- Department of Health/Hong Kong
[14] WHO-recommended surveillance standard of diphtheria
[15] WHO-recommended surveillance standard of diphtheria

[16] Case Definitions for Notifiable Diseases - 2012 - Ireland
[17] Case Definitions for Notifiable Diseases - 2012 - Ireland
[18] Case Definitions for Notifiable Diseases - 2012 - Ireland
[19] Case Definitions for Notifiable Diseases - 2012 - Ireland
[20] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[21] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[22] Communicable Disease Surveillance Case Definitions - Version 8.9 - 3 June 2013- Department of Health/Hong Kong
[23] Communicable Disease Surveillance Case Definitions - Version 8.9 - 3 June 2013- Department of Health/Hong Kong
[24] Communicable Disease Surveillance Case Definitions - Version 8.9 - 3 June 2013- Department of Health/Hong Kong
[25] Communicable Disease Surveillance Case Definitions - Version 8.9 - 3 June 2013- Department of Health/Hong Kong
[26] Communicable Disease Surveillance Case Definitions - Version 8.9 - 3 June 2013- Department of Health/Hong Kong
[27] Communicable Disease Surveillance Case Definitions - Version 8.9 - 3 June 2013- Department of Health/Hong Kong
[28] A Guide to clinical management and public health response for hand, foot and mouth disease (HFMD)- World Health Organization 2011
[29] Interim Guidelines On the Surveillance of Hand, Foot and Mouth Disease (HFMD) and Severe Enteroviral Disease - Republic of the Philippines-Department of Health-2012
[30] A Guide to clinical management and public health response for hand, foot and mouth disease (HFMD)- World Health Organization 2011
[31] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[32] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[33] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[34] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[35] WHO-recommended surveillance standard of acute viral hepatitis
[36] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[37] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[38] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[39] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[40] WHO-recommended surveillance standard of acute viral hepatitis, CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[41] WHO-recommended surveillance standard of acute viral hepatitis, CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[42] WHO-recommended surveillance standard of acute viral hepatitis, CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[43] Case Definitions for Notifiable Diseases - 2012 - Ireland
[44] Case Definitions for Notifiable Diseases - 2012 - Ireland
[45] Case Definitions for Notifiable Diseases - 2012 - Ireland
[46] WHO Recommended Surveillance Standards. Second edition
[47] WHO Recommended Surveillance Standards. Second edition
[48] WHO Recommended Surveillance Standards. Second edition
[49] WHO Recommended Surveillance Standards. Second edition
[50] WHO Recommended Surveillance Standards. Second edition
[51] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[52] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[53] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[54] Communicable Disease Surveillance Case Definitions Version 8.9 - 3 June 2013
[55] Case Definitions for Notifiable Diseases - 2012 - Ireland
[56] Case Defin

itions for Notifiable Diseases - 2012 - Ireland
[57] Case Definitions for Notifiable Diseases - 2012 - Ireland
[58] Case Definitions for Notifiable Diseases - 2012 - Ireland
[59] Case Definitions for Notifiable Diseases - 2012 - Ireland
[60] Case Definitions for Notifiable Diseases - 2012 - Ireland
[61] Case Definitions for Notifiable Diseases - 2012 - Ireland
[62] Communicable Disease Surveillance Case Definitions - Version 8.9 - 3 June 2013- Department of Health/Hong Kong
[63] Communicable Disease Surveillance Case Definitions - Version 8.9 - 3 June 2013- Department of Health/Hong Kong
[64] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[65] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[66] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[67] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[68] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[69] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006
[70] Case Definitions for Notifiable Diseases - 2012 - Ireland
[71] Case Definitions for Notifiable Diseases - 2012 - Ireland
[72] Case Definitions for Notifiable Diseases - 2012 - Ireland
[73] Case Definitions for Notifiable Diseases - 2012 - Ireland
[74] Case Definitions for Notifiable Diseases - 2012 - Ireland
[75] Case Definitions for Notifiable Diseases - 2012 - Ireland
[76] Case Definitions for Notifiable Diseases - 2012 - Ireland
[77] Case Definitions for Notifiable Diseases - 2012 - Ireland
[78] Case Definitions for Notifiable Diseases - 2012 - Ireland
[79] WHO Recommended Surveillance Standards. Second edition
[80] WHO Recommended Surveillance Standards. Second edition
[81] Case Definitions for Notifiable Diseases - 2012 - Ireland
[82] Case Definitions for Notifiable Diseases - 2012 - Ireland
[83] Case Definitions for Notifiable Diseases - 2012 - Ireland
[84] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO
[85] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO
[86] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO
[87] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO
[88] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO
[89] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO
[90] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO
[91] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO
[92] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO
[93] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[94] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[95] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[96] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[97] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[98] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[99] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[100] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[101] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[102] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[103] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[104] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[105] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[106] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[107] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[108] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[109] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[110] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[111] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[112] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[113] Definitions and reporting framework for tuberculosis – 2013 revision/ WHO

[114] Communicable Disease Surveillance Case Definitions - Version 8.9 - 3 June 2013- Department of Health/Hong Kong

[115] Communicable Disease Surveillance Case Definitions - Version 8.9 - 3 June 2013- Department of Health/Hong Kong

[116] WHO-recommended surveillance standard of pertussis

[117] WHO-recommended surveillance standard of pertussis

[118] WHO-recommended surveillance standard of pertussis

[119] WHO-recommended surveillance standard of yellow fever

[120] WHO-recommended surveillance standard of yellow fever

[cxxi] Strategies and laboratory methods for strengthening surveillance of sexually transmitted infections 2012 WHO/UNAIDS

[cxxii] 2011- STD Surveillance Case Definitions - CDC

[cxxiii] 2011- STD Surveillance Case Definitions - CDC

[cxxiv] 2011- STD Surveillance Case Definitions - CDC

[cxxv] Case Definitions for Notifiable Diseases - 2012 - Ireland

[cxxvi] CASE DEFINITIONS FOR INFECTIOUS DISEASES IN MALAYSIA - 2nd Edition - Jan 2006

[cxxvii] 2011- STD Surveillance Case Definitions - CDC

[cxxviii] Strategies and laboratory methods for strengthening surveillance of sexually transmitted infections 2012 WHO/UNAIDS

[cxxix] Strategies and laboratory methods for strengthening surveillance of sexually transmitted infections 2012 WHO/UNAIDS

[cxxx] 2011- STD Surveillance Case Definitions - CDC

[cxxxi] 2011- STD Surveillance Case Definitions - CDC

[cxxxii] 2012 Nationally Notifiable Diseases and Conditions and Current Case Definitions - CDC

[cxxxiii] Strategies and laboratory methods for strengthening surveillance of sexually transmitted infections 2012 WHO/UNAIDS

[cxxxiv] Strategies and laboratory methods for strengthening surveillance of sexually transmitted infections 2012 WHO/UNAIDS

[cxxxv] 2011- STD Surveillance Case Definitions - CDC

[cxxxvi] 2011- STD Surveillance Case Definitions - CDC

[cxxxvii] 2011- STD Surveillance Case Definitions - CDC

[cxxxviii] 2011- STD Surveillance Case Definitions - CDC

[cxxxix] Strategies and laboratory methods for strengthening surveillance of sexually transmitted infections 2012 WHO/UNAIDS

[cxl] 2011- STD Surveillance Case Definitions - CDC

[cxli] 2011- STD Surveillance Case Definitions - CDC

[cxlii] Strategies and laboratory methods for strengthening surveillance of sexually transmitted infections 2012 WHO/UNAIDS

[cxliii] Strategies and laboratory methods for strengthening surveillance of sexually transmitted infections 2012 WHO/UNAIDS

[cxliv] Strategies and laboratory methods for strengthening surveillance of sexually transmitted infections 2012 WHO/UNAIDS

[cxlv] Strategies and laboratory methods for strengthening surveillance of sexually transmitted infections 2012 WHO/UNAIDS

[cxlvi] Strategies and laboratory methods for strengthening surveillance of sexually transmitted infections 2012 WHO/UNAIDS