

ANNEX 1. Syndromes under Surveillance

The syndromes under regional surveillance include the following:

- Acute Flaccid Paralysis (AFP)
- Fever and Respiratory Symptoms (Influenza-like Illness, Acute Respiratory Infections, and Severe Acute Respiratory Infections)
- Fever and Haemorrhagic Symptoms
- Fever and Neurological Symptoms (except AFP)
- Fever and Rash
- Gastroenteritis
- Undifferentiated Fever

Acute Flaccid Paralysis (AFP)

Case definition:

Acute (sudden) onset of flaccid paralysis in the absence of trauma.

Possible aetiology:

Poliomyelitis, Zika, heavy metal poisoning, snake poisoning

Fever and Respiratory Symptoms (Influenza-like Illness and Severe Acute Respiratory Infections)

Case definition:

ARI case definition – An acute respiratory infection – (having at least one of the following: shortness of breath; cough, sore throat, coryza) with:

- Reported fever of $\geq 38^{\circ}\text{C}$;
- and cough;
- with onset within the last 10 days

ILI case definition – An acute respiratory infection with:

- Measured fever of $\geq 38^{\circ}\text{C}$;
- and cough;
- with onset within the last 10 days

SARI case definition – An acute respiratory infection with:

- History of fever or measured fever of $\geq 38^{\circ}\text{C}$;
- and cough;
- with onset within the last 10 days;
- and requires hospitalization

Possible aetiology:

Influenza, Respiratory Syncytial Virus (RSV), Metapneumovirus, SARS-CoV 1 & 2, MERS-CoV, Hantavirus, Leptospirosis, Pertussis, Diphtheria, Streptococcal disease (Group A), Pneumococcal pneumonia, *Haemophilus influenzae*, Legionellosis, Anthrax.

	SYNDROME	FEVER AND RESPIRATORY	
	Possible Pathogens/Diseases		Case Definition:
	Influenza A&B COVID-19 MERS CoV Adenovirus Rhinovirus Respiratory Syncytial Virus (RSV) Human Metapneumovirus Parainfluenza 1, 2, 3 & 4 Coronavirus 229E HKU1, OC43, NL63 Human Enterovirus		Fever ($\geq 38.0^{\circ}\text{C}$ or 100.4°F), with or without respiratory distress, with cough, within the past 10 days
	Hantavirus Pulmonary Syndrome		
	<i>Bordetella pertussis</i> <i>Bordetella parapertussis</i> <i>Chlamydia pneumoniae</i> <i>Mycoplasma pneumoniae</i>		
	Diphtheria Group A Streptococcal Disease		
	Pneumococcal pneumonia <i>Haemophilus influenzae</i> Legionellosis* Anthrax*		
Specimens		Testing	
Nasopharyngeal swab/aspirate Throat Swab Broncho-alveolar aspirate/lavage		Primary Antigen detection assay for Influenza and RSV (Immunofluorescence Assay IFA Influenza)	Epidemiologic Data: - Previously healthy person - Prior medication - Recent travel - Contact with animals - Contact with similar cases
Acute and/or Convalescent Serum			
Nasopharyngeal Swab/Throat		Reference Genome detection (Polymerase Chain Reaction, nucleic acid amplification tests)	
Throat Swab			
Blood Serum Sputum			
		Bacterial Culture	PCR Mass Spectrometry Bacterial ID
			Genome detection
Notes: 1. Acute Serum <5 days from onset of symptoms; Convalescent serum > 5 days from onset of symptoms. 2. If primary testing cannot be performed at the National Laboratory, specimens may be referred to CARPHA for reference testing 3. For pathogens marked with an *Kindly, contact CARPHA prior to sending samples			
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Fever and Haemorrhagic Symptoms

Case definition:

Acute (sudden) onset of fever in a previously healthy person, presenting with at least one haemorrhagic (bleeding) manifestation with or without jaundice (e.g. purpura, epistaxis, haemoptysis, melena).

Possible aetiology:

Dengue Fever, Leptospirosis, Yellow Fever, Hantaviruses, South American haemorrhagic fevers (arenaviruses: Guanarito, Junin, Machupo, Sabia viruses), Malaria (*Plasmodium falciparum*), Ebola Haemorrhagic fever, Lassa Fever.

 Caribbean Public Health Agency CARPHA	SYNDROME 	FEVER AND HAEMORRHAGIC SYMPTOMS CASE DEFINITION: Fever (>38°C or 100.4°F) with or without Jaundice with at least one of the following Haemorrhagic (bleeding) manifestations • Haemorrhagic Symptoms • Haematochezia • Any other haemorrhagic symptom • Purpura • Melena • Epistaxis EPIDEMIOLOGIC DATA: • Previously healthy person? • Recent travel? • Contact with Insects and rodents? • Contact with similar cases? • Prior medications? • No history of coagulation disorder?
POSSIBLE PATHOGENS/DISEASES Dengue Leptospirosis Yellow Fever Hantavirus South American Haemorrhagic fevers (Arenaviruses) Viral Haemorrhagic Fevers Meningococcal Sepsis Malaria (Plasmodium falciparum)	SPECIMENS Acute or Convalescent Serum Blood Smear Venous Whole Blood	TESTING PRIMARY (National Laboratory) Serology (ELISA) Point of Care Testing Parasite Demonstration REFERENCE (CARPHA Laboratory) Antigen Detection Genome Detection (PCR) Genome Detection (PCR)
Notes: 1. Acute Serum ≤5 days from onset of symptoms; Convalescent serum > 5 days from onset of symptoms. 2. If primary testing cannot be performed at the National Laboratory, specimens may be referred to CARPHA for reference testing 3. For pathogens marked with an *:Kindly, contact CARPHA prior to sending samples CARPHA Caribbean Public Health Agency Trinidad and Tobago 15-418 Jamaica Road, Federation Park, Port of Spain +1 (868) 299-0200-29 +1 (868) 299-0899 +1 (868) 622-4261-42 percomm@carpha.org St. Lucia The Marine, Castries, St. Lucia +1 (758) 452-1087 carpha@carpha.org Jamaica Hope Gardens, Kingston 6, Jamaica +1 (876) 977-4340 carphajam@carpha.org		

Fever and Neurological Symptoms (except AFP):

Case definition:

Acute (sudden) onset of fever with or without headache and vomiting in a previously healthy person presenting with at least one of the following signs: meningeal irritation, convulsions, altered consciousness, altered sensory manifestations, paralysis (except AFP)

Possible aetiology:

Meningitis/Meningoencephalitis

Viral: Enterovirus, West Nile, Adenovirus, Herpes, Mumps, Varicella-Zoster

Bacterial: Meningococcal meningitis, Pneumococcal meningitis, *Haemophilus influenzae*, Leptospirosis

Parasitic: Malaria (*Plasmodium falciparum*), Trypanosomiasis

Encephalitis: Rabies, West Nile, Herpes, St. Louis Encephalitis, Venezuelan-, Eastern-, Western-Equine Encephalitis

 Caribbean Public Health Agency CARPHA	SYNDROME	FEVER AND NEUROLOGICAL		
				
POSSIBLE PATHOGENS/DISEASES				
VIRAL Enterovirus West Nile Cytomegalovirus Herpes Virus 1,2 & 6 Human Parechovirus Varicella Zoster Virus		CASE DEFINITION: Fever ($\geq 38.0^{\circ}\text{C}$ or 100.4°F) with or without headache and vomiting with at least one of the following signs: • Meningeal irritation • Convulsions • Altered consciousness • Altered sensory manifestations • Paralysis (apart from AFP)		
BACTERIAL Meningococcal Meningitis Pneumococcal Meningitis Leptospirosis <i>Haemophilus influenzae</i> <i>Escherichia coli</i> K1 <i>Listeria monocytogenes</i> <i>Streptococcus agalactiae</i>		EPIDEMIOLOGIC DATA: • Previously healthy person? • Recent travel? • Contact with Insects and rodents? • Contact with similar cases? • Prior medications? • Risk factor for HIV?		
FUNGAL <i>Cryptococcus spp</i>				
PARASITIC Malaria Trypanosomiasis				
ENCEPHALITIS Rabies West Nile St. Louis Encephalitis Equine Encephalitis Herpes				
Notes: 1. Acute Serum ≤ 5 days from onset of symptoms, Convalescent serum $>$ days from onset of symptoms 2. If patient presents with AFP, follow EPI Protocol. 3. Please refer to Laboratory User Manual for guidelines on post mortem samples 4. If Primary testing cannot be performed at the national laboratory, specimens may be referred to CARPHA		SPECIMENS CSF Throat Swab Acute and Convalescent Serum Blood Culture Blood Smear CSF Acute and convalescent Serum Post Mortem specimens	TESTING PRIMARY Antigen Detection (Immunofluorescence Assa (IFA)— if available) Serology (if available) Gram Stain Bacterial Culture Point of Care Testing Parasite demonstration?	REFERENCE Antigen Detection Mass Spectrometry Microbial ID Serology Genome Amplification (Polymerase Chain Reaction (PCR)) Bacterial subtyping Antimicrobial Resistance Testing
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Fever and Rash

Case definition:

Acute (sudden) febrile illness ($>38.0^{\circ}\text{C}$ or 100.4°F) in a previously healthy person, presenting generalized maculo-papular rash.

Possible aetiology:

Measles, rubella, chickenpox

Gastroenteritis

Case definition:

Acute onset of diarrhoea, with or without fever, and presenting with 3 or more loose stools or watery stools in the past 24 hours, with or without dehydration, vomiting and/or visible blood.

Possible aetiology:

Viral gastroenteritis: Norovirus, Rotavirus (Group A, B or C), Adenovirus, Calicivirus, Astrovirus, Hepatitis A

Bacterial gastroenteritis: Pathogenic *E. coli* (EHEC, ETEC), Campylobacteriosis, Cholera, Shigellosis, Salmonellosis, Typhoid/Paratyphoid

Parasitic gastroenteritis: Giardiasis, Amoebiasis (e.g. *Entamoeba histolytica*), Cryptosporidium, Cyclospora.

 Caribbean Public Health Agency CARPHA	SYNDROME	GASTROENTERITIS		
		CASE DEFINITION:	EPIDEMIOLOGIC DATA:	
		Acute onset of diarrhea (3 or more loose or watery stools in 24 hours), with or without fever, vomiting, dehydration, or visible blood	• Previously healthy person? • Recent travel? • Contact with similar cases? • Food and water history	
POSSIBLE PATHOGENS/DISEASES		SPECIMENS	TESTING	
VIRAL		STOOLS	PRIMARY	REFERENCE
Rotavirus Norovirus Adenovirus Calicivirus Astrovirus Sapovirus			Rapid Tests	FURTHER TESTING: Pathogen Characterisation, typing and confirmation • Serotyping • Genotyping • Sequencing • PCR • Mass Spectrometry Microbial ID • AMR Testing
BACTERIAL			Culture and Sensitivity	
Salmonellosis Typhoid/Paratyphoid Pathogenic <i>E. coli</i> Campylobacteriosis Shigellosis Cholera Listeriosis <i>Clostridium difficile</i> (toxin A/B) <i>Plesiomonas shigelloides</i> Shiga-like toxin-producing <i>E. coli</i> (STEC) stx1/stx2 <i>Yersinia enterocolitica</i> <i>Shigella</i> /Enteroinvasive <i>E. coli</i> (EIEC)			Parasite Demonstration	
PARASITIC				
Giardiasis Cryptosporidiosis Cyclosporiasis Amoebiasis (<i>Entamoeba histolytica</i> ; other amoebae)				
Notes: 1. If primary testing cannot be performed at the National Laboratory, specimens may be referred to CARPHA for reference testing		CARPHA Caribbean Public Health Agency Trinidad and Tobago 16-18 Jamaica Road, Federation Park, Port of Spain +1 (868) 299-0820/29 +1 (868) 299-0895 +1 (868) 622-4321-42 pestcontrol@carpha.org St. Lucia The Marine, Castries, St. Lucia +1 (768) 452-1087 carpha@carpha.org Jamaica Hope Gardens, Kingston 6, Jamaica +1 (876) 977-4340 carphajama@carpha.org		

Undifferentiated Fever

Case definition:

An acute (sudden) febrile illness in a previously healthy person of less than seven (7) days duration with **two or more** of the following manifestations: headache, retro-orbital pain, myalgia, arthralgia, nausea, vomiting, jaundice, rash – AND without any symptoms fitting another syndrome definition.

Possible aetiology:

Dengue Fever, Chikungunya, Leptospirosis, Malaria, Other Arboviral fevers, Viral Hepatitis, Hantavirus, Brucellosis, Typhoid/Paratyphoid, Meningococcal infection, Borreliosis, Ebola Haemorrhagic Fever, Mumps

SYNDROME



UNDIFFERENTIATED FEVER

CASE DEFINITION:

Fever ($>38.0^{\circ}\text{C}$ or 100.4°F), with two or more of the following symptoms:

- Headache
- Arthralgia
- Vomiting
- Retro-orbital Pain
- Myalgia
- Jaundice
- Nausea
- Arthritis

EPIDEMIOLOGIC DATA:

- Previously healthy person?
- Recent travel?
- Contact with Insects and rodents?
- Contact with similar cases?
- Prior medications?

POSSIBLE PATHOGENS/DISEASES

Dengue | Zika | Chikungunya | Mayaro Viruses
Other arboviral fevers | Leptospirosis | Hantavirus

Brucellosis | Typhoid/Paratyphoid
Meningococcal infection

Malaria (*Plasmodium spp.*) | Borreliosis

SPECIMENS

Acute and/or
convalescent
serum
Whole Blood
Urine

Whole Blood
Serum

Blood smear
Serum

TESTING

PRIMARY

Antigen Detection
(Immunofluorescence Assay
(IFA) if available
Serology

Blood smear
Serum

Parasite demonstration
Serology
Rapid Diagnostic Testing

REFERENCE

Viral Isolation
Antigen detection
Genome detection
(Polymerase Chain
Reaction (PCR))
Bacterial subtyping
Antimicrobial Resistance
Testing
Mass Spectrometry
Microbial ID
PCR

Notes:

1. Acute Serum ≤ 5 days from onset of symptoms; Convalescent serum > 5 days from onset of symptoms
2. If primary testing cannot be performed at the National Laboratory, specimens may be referred to CARPHA for reference testing
3. Measles and Rubella must be tested for if rash is present in children, as per the EPI programme protocol

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