

WEEKLY EPIDEMIOLOGY BULLETIN

NATIONAL EPIDEMIOLOGY UNIT, MINISTRY OF HEALTH & WELLNESS, JAMAICA

EPI WEEK 16

Biological Weapons: Series 10 of 10: Tularemia

What is Tularemia? Tularemia is a potentially serious illness that occurs naturally in the United States. It is caused by the bacterium *Francisella tularensis* found in animals (especially rodents, rabbits, and hares).

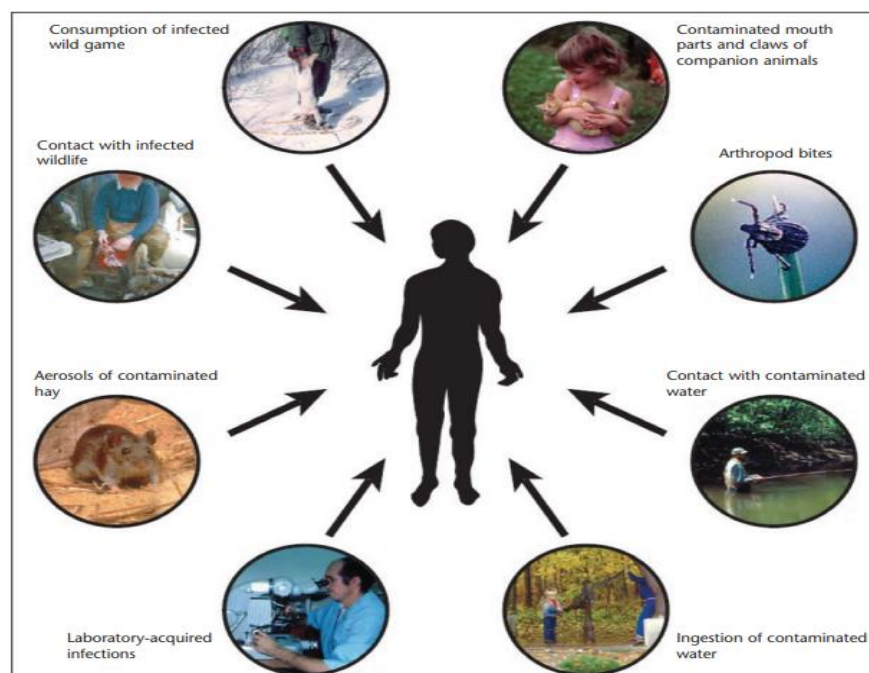
What are the Symptoms of Tularemia? Symptoms of tularemia could include: **1.** Sudden fever. **2.** Chills. **3.** Headaches. **4.** Diarrhoea. **5.** Muscle aches. **6.** Joint pain. **7.** Dry cough. **8.** Progressive weakness. People can also catch pneumonia and develop chest pain, bloody sputum and can have trouble breathing and even sometimes stop breathing. Other symptoms of tularemia depend on how a person was exposed to the tularemia bacteria. These symptoms can include **1.** Ulcers on the skin or mouth. **2.** Swollen and painful lymph glands. **3.** Swollen and painful eyes. **4.** Sore throat.

How Does Tularemia Spread? People can get tularemia many different ways: **1.** Being bitten by an infected tick, deerfly or other insect. **2.** Handling infected animal carcasses. **3.** Eating or drinking contaminated food or water. **4.** Breathing in the bacteria, *F. tularensis*. Tularemia is not known to be spread from person to person. People who have tularemia do not need to be isolated. People who have been exposed to the tularemia bacteria should be treated as soon as possible. The disease can be fatal if it is not treated with the right antibiotics.

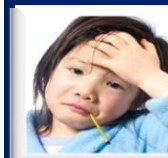
How Soon Do Infected People Get Sick? Symptoms usually appear 3 to 5 days after exposure to the bacteria, but can take as long as 14 days.

What Can I Do To Prevent Becoming Infected with Tularemia? Tularemia occurs naturally in many parts of the United States. Use insect repellent containing DEET on your skin, or treat clothing with repellent containing permethrin, to prevent insect bites. Wash your hands often, using soap and warm water, especially after handling animal carcasses. Be sure to cook your food thoroughly and that your water is from a safe source. Note any change in the behavior of your pets (especially rodents, rabbits, and hares) or livestock, and consult a veterinarian if they develop unusual symptoms.

Can Tularemia Be Used As a Weapon? *Francisella tularensis* is very infectious. A small number (10-50 or so organisms) can cause disease. If *F. tularensis* were used as a weapon, the bacteria would likely be made airborne for exposure by inhalation. People who inhale an infectious aerosol would generally experience severe respiratory illness, including life-threatening pneumonia and systemic infection, if they are not treated. The bacteria that cause tularemia occur widely in nature and could be isolated and grown in quantity in a laboratory, although manufacturing an effective aerosol weapon would require considerable sophistication.



<https://emergency.cdc.gov/agent/tularemia/facts.asp>



SYNDROMES

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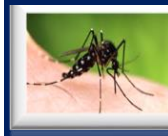
CLASS 1 DISEASES

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INFLUENZA

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DENGUE FEVER

PAGE 6



GASTROENTERITIS

PAGE 7



RESEARCH PAPER

PAGE 8

SENTINEL SYNDROMIC SURVEILLANCE

Sentinel Surveillance in Jamaica



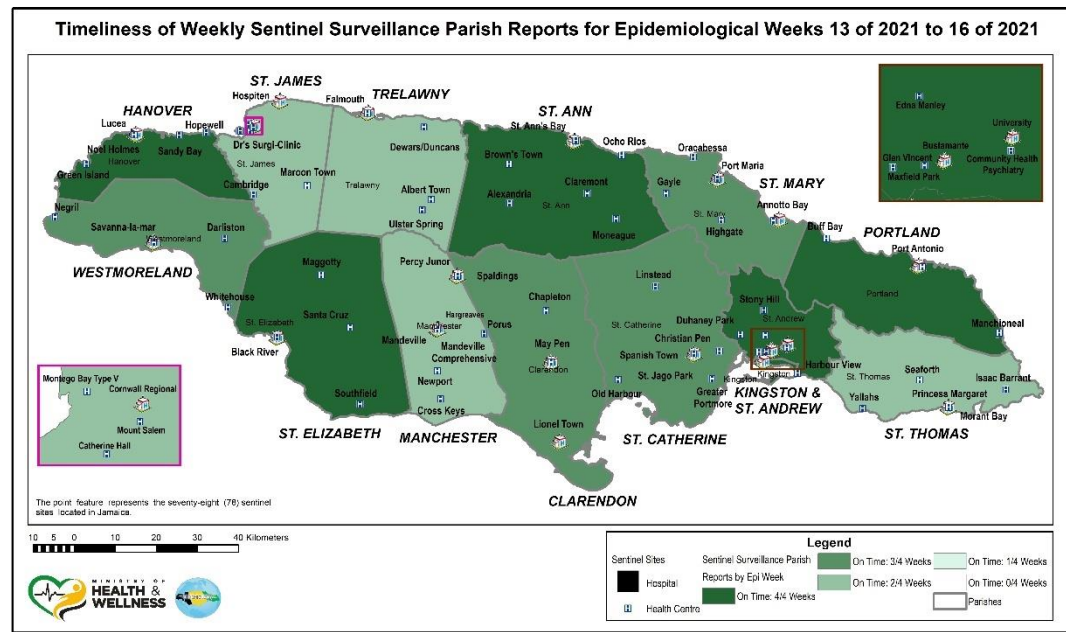
A syndromic surveillance system is good for early detection of and response to public health events.

Sentinel surveillance occurs when selected health facilities (sentinel sites) form a network that reports on certain health conditions on a regular basis, for example, weekly. Reporting is mandatory whether or not there are cases to report.

Jamaica's sentinel surveillance system concentrates on visits to sentinel sites for health events and syndromes of national importance which are reported weekly (see pages 2 -4). There are seventy-eight (78) reporting sentinel sites (hospitals and health centres) across Jamaica.

Map representing the Timeliness of Weekly Sentinel Surveillance Parish Reports for the Four Most Recent Epidemiological Weeks - 13 2021 to 16 of 2021

Parish health departments submit reports weekly by 3 p.m. on Tuesdays. Reports submitted after 3 p.m. are considered late.



REPORTS FOR SYNDROMIC SURVEILLANCE

FEVER

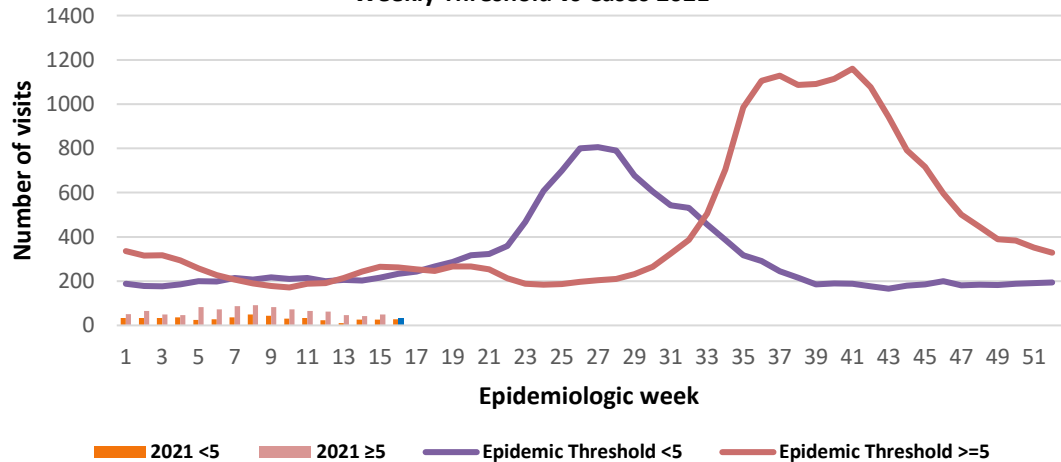
Temperature of >38°C /100.4°F (or recent history of fever) with or without an obvious diagnosis or focus of infection.



KEY

VARIATIONS OF BLUE SHOW CURRENT WEEK

Weekly Visits to Sentinel Sites for Undifferentiated Fever All ages: Jamaica, Weekly Threshold vs Cases 2021



2 NOTIFICATIONS- All clinical sites



INVESTIGATION REPORTS- Detailed Follow up for all Class One Events



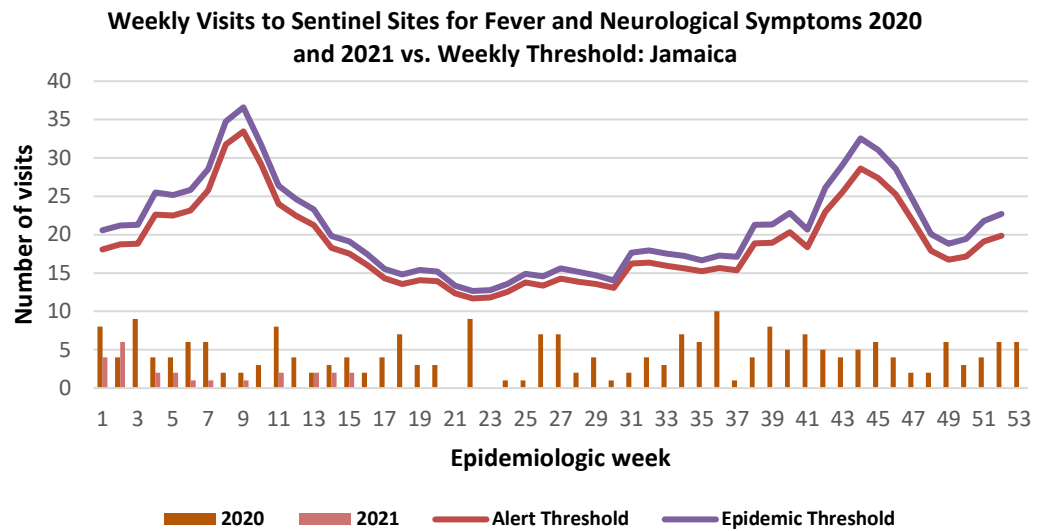
HOSPITAL ACTIVE SURVEILLANCE- 30 sites. Actively pursued



SENTINEL REPORT- 78 sites. Automatic reporting

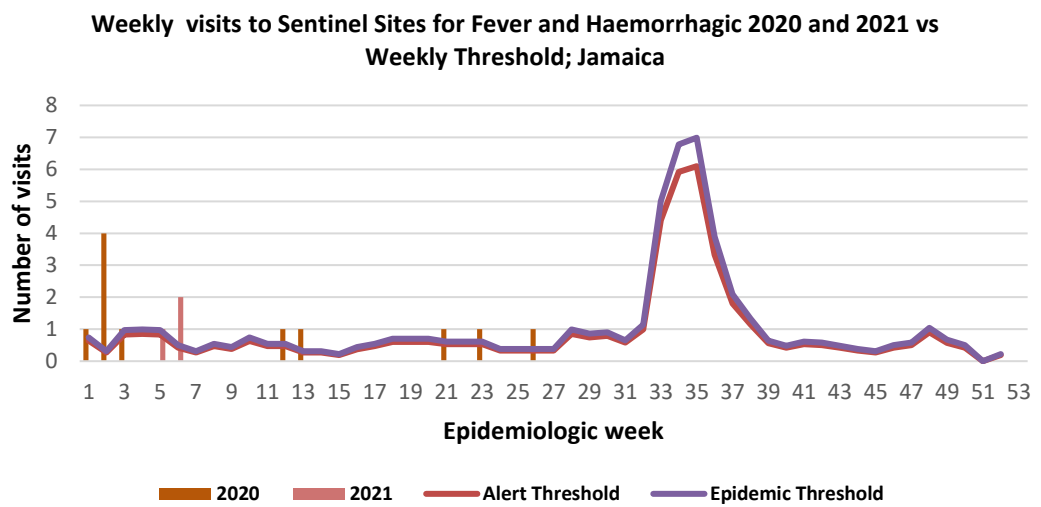
FEVER AND NEUROLOGICAL

Temperature of $>38^{\circ}\text{C}$ / 100.4°F (or recent history of fever) in a previously healthy person with or without headache and vomiting. The person must also have meningeal irritation, convulsions, altered consciousness, altered sensory manifestations or paralysis (except AFP).



FEVER AND HAEMORRHAGIC

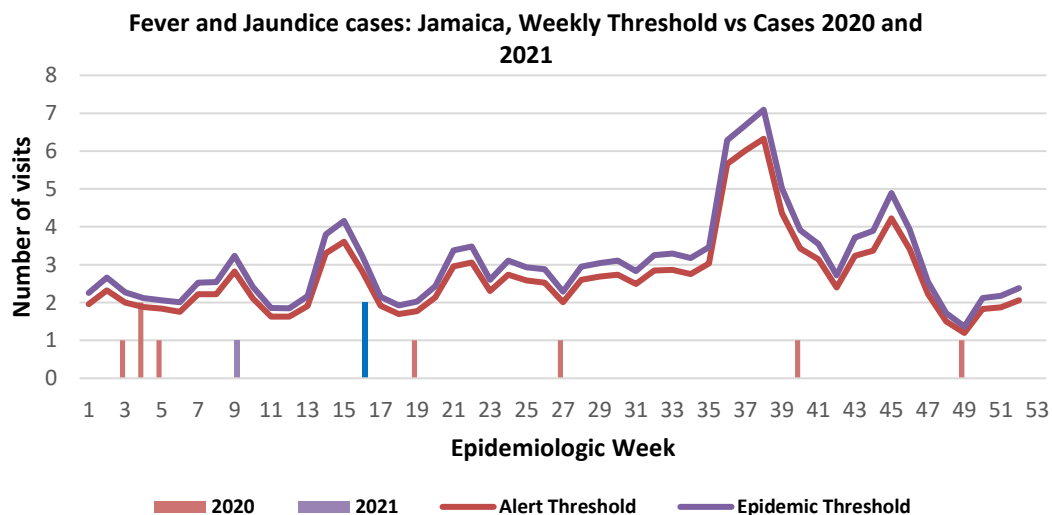
Temperature of $>38^{\circ}\text{C}$ / 100.4°F (or recent history of fever) in a previously healthy person presenting with at least one haemorrhagic (bleeding) manifestation with or without jaundice.



FEVER AND JAUNDICE

Temperature of $>38^{\circ}\text{C}$ / 100.4°F (or recent history of fever) in a previously healthy person presenting with jaundice.

The epidemic threshold is used to confirm the emergence of an epidemic in order to implement control measures. It is calculated using the mean reported cases per week plus 2 standard deviations.



3 NOTIFICATIONS-
All clinical sites



INVESTIGATION REPORTS- Detailed Follow up for all Class One Events



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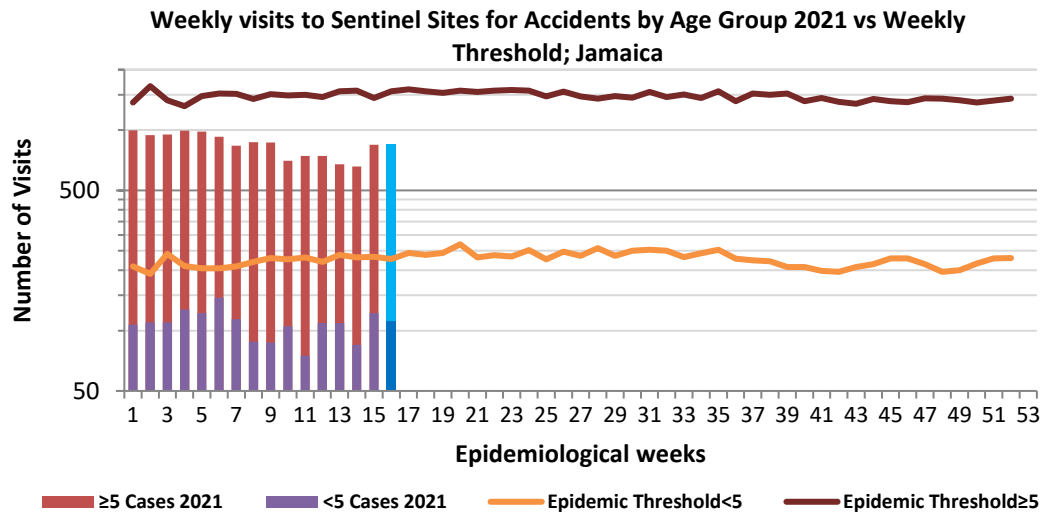
SENTINEL REPORT- 78 sites. Automatic reporting

ACCIDENTS

Any injury for which the cause is unintentional, e.g. motor vehicle, falls, burns, etc.

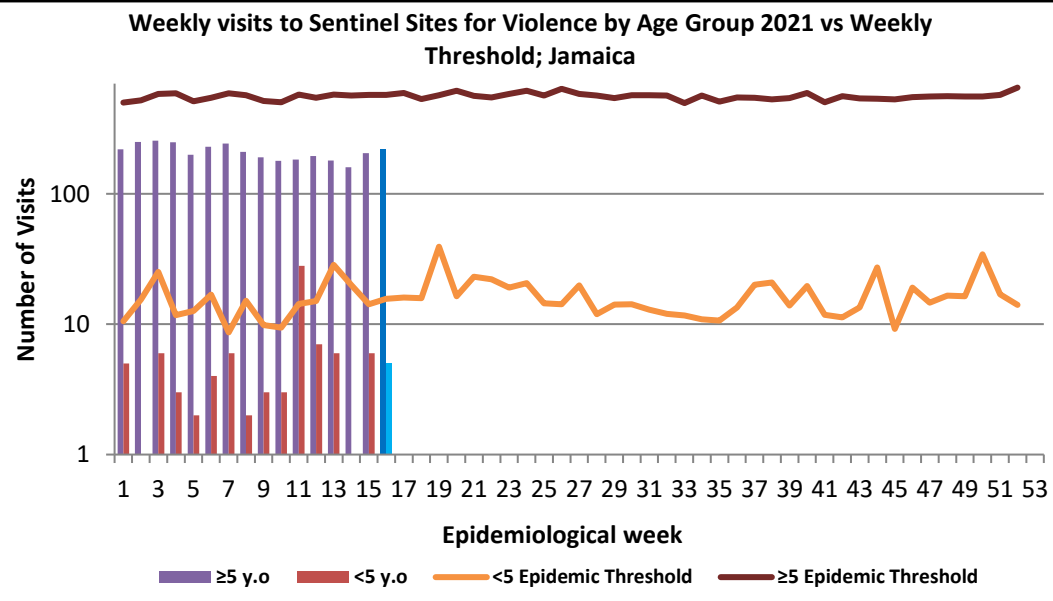
KEY

VARIATIONS OF BLUE SHOW CURRENT WEEK



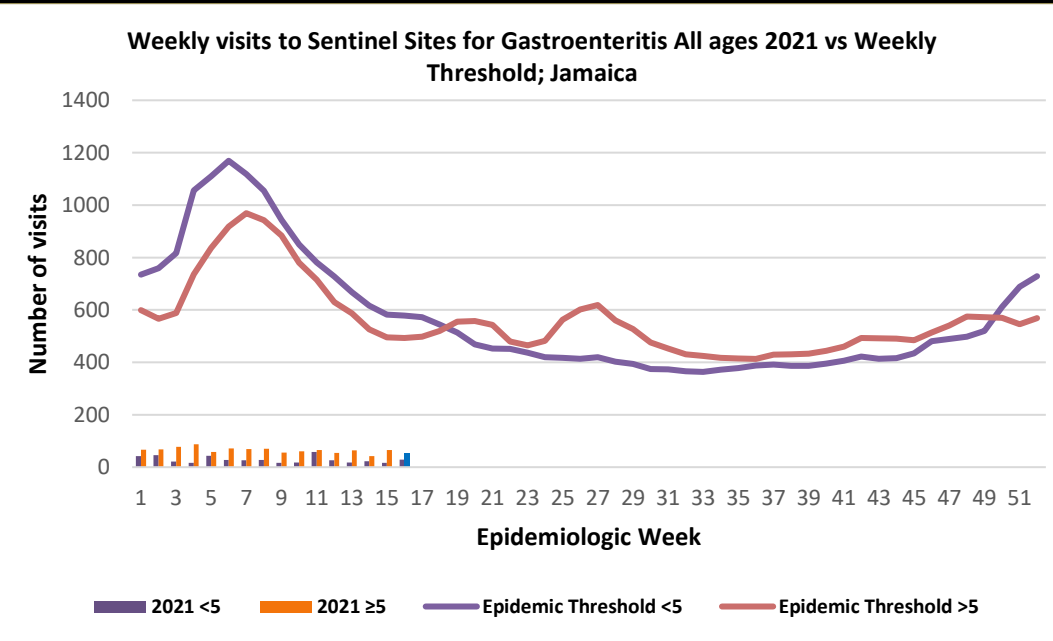
VIOLENCE

Any injury for which the cause is intentional, e.g. gunshot wounds, stab wounds, etc.



GASTROENTERITIS

Inflammation of the stomach and intestines, typically resulting from bacterial toxins or viral infection and causing vomiting and diarrhoea.



4 NOTIFICATIONS-
All clinical sites



INVESTIGATION REPORTS- Detailed Follow up for all Class One Events



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CLASS ONE NOTIFIABLE EVENTS			Comments	
			Confirmed YTD ^α	
	CLASS 1 EVENTS		CURRENT YEAR 2021	PREVIOUS YEAR 2020
NATIONAL /INTERNATIONAL INTEREST	Accidental Poisoning		0 ^β	37
	Cholera		0	0
	Dengue Hemorrhagic Fever ^γ		See Dengue page below	See Dengue page below
	Hansen's Disease (Leprosy)		0	0
	Hepatitis B		0	0
	Hepatitis C		0	0
	HIV/AIDS		NA	NA
	Malaria (Imported)		0	0
	Meningitis (Clinically confirmed)		0	1
EXOTIC/ UNUSUAL	Plague		0	0
HIGH MORBIDITY/ MORTALITY	Meningococcal Meningitis		0	0
	Neonatal Tetanus		0	0
	Typhoid Fever		0	0
	Meningitis H/Flu		0	0
SPECIAL PROGRAMMES	AFP/Polio		0	0
	Congenital Rubella Syndrome		0	0
	Congenital Syphilis		0	0
	Fever and Rash	Measles	0	0
		Rubella	0	0
	Maternal Deaths ^δ		7	14
	Ophthalmia Neonatorum		0	38
	Pertussis-like syndrome		0	0
	Rheumatic Fever		0	0
	Tetanus		0	0
Tuberculosis		0	12	
Yellow Fever		0	0	
Chikungunya ^ε		0	0	
Zika Virus ^θ		0	0	

AFP Field Guides from WHO indicate that for an effective surveillance system, detection rates for AFP should be 1/100,000 population under 15 years old (6 to 7) cases annually.

Pertussis-like syndrome and Tetanus are clinically confirmed classifications.

^γ Dengue Hemorrhagic Fever data include Dengue related deaths;

^δ Figures include all deaths associated with pregnancy reported for the period.

^ε CHIKV IgM positive cases

^θ Zika PCR positive cases

^β Updates made to prior weeks in 2020.

^α Figures are cumulative totals for all epidemiological weeks year to date.

NA- Not Available



5 NOTIFICATIONS- All clinical sites



INVESTIGATION REPORTS- Detailed Follow up for all Class One Events



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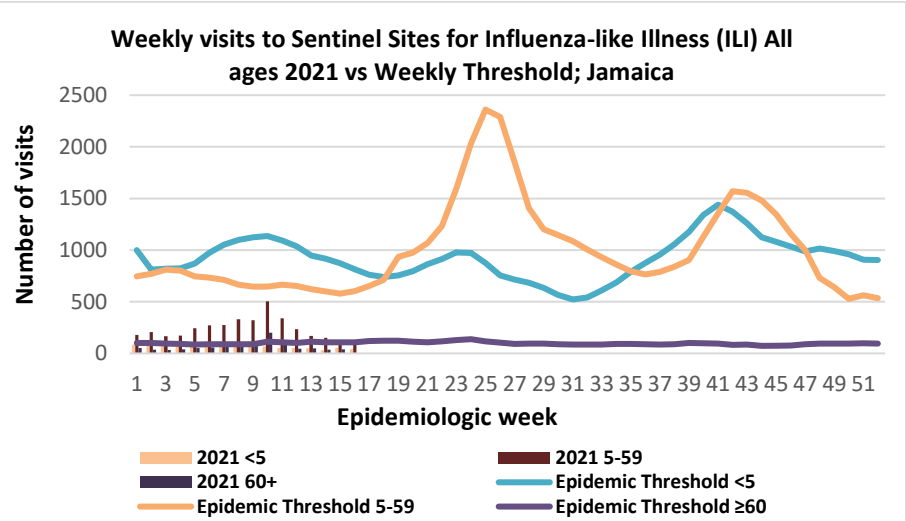
SENTINEL REPORT- 78 sites. Automatic reporting

NATIONAL SURVEILLANCE UNIT INFLUENZA REPORT

EW 16

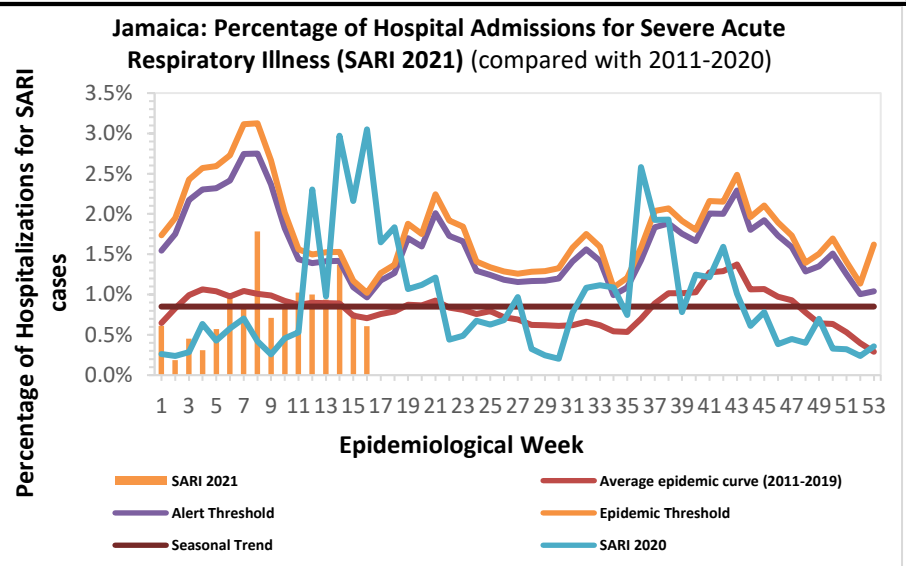
April 18, 2021 – April 24, 2021 Epidemiological Week 16

	EW 16	YTD
SARI cases	08	194
Total Influenza positive Samples	0	0
Influenza A	0	0
H3N2	0	0
H1N1pdm09	0	0
Not subtyped	0	0
Influenza B	0	0
Parainfluenza	0	0



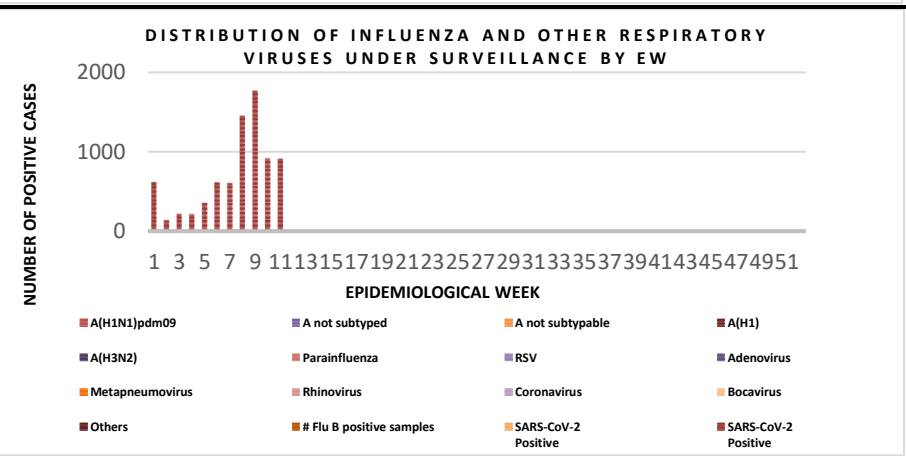
Epi Week Summary

During EW 16, 08 (eight) SARI admissions were reported.



Caribbean Update EW 16

Caribbean: Influenza and other respiratory virus activity remained low. In Jamaica, SARS-CoV-2 activity remained at moderate levels, while SARI activity continued to increase.



6 NOTIFICATIONS-
All clinical sites



INVESTIGATION REPORTS- Detailed Follow up for all Class One Events



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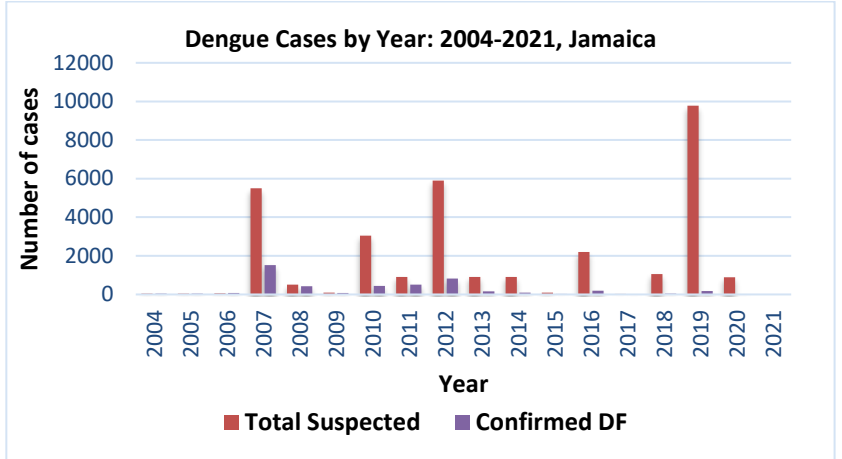


SENTINEL REPORT- 78 sites. Automatic reporting

Dengue Bulletin

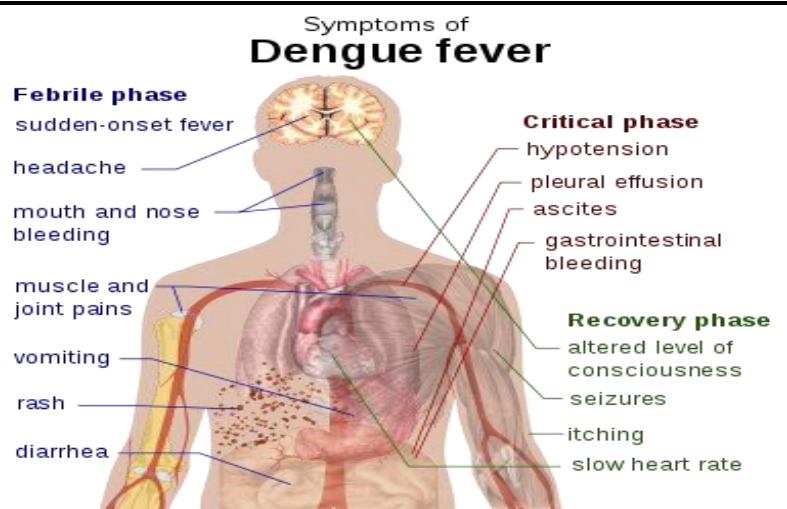
April 18, 2020 – April 24, 2021 Epidemiological Week 16

Epidemiological Week 16



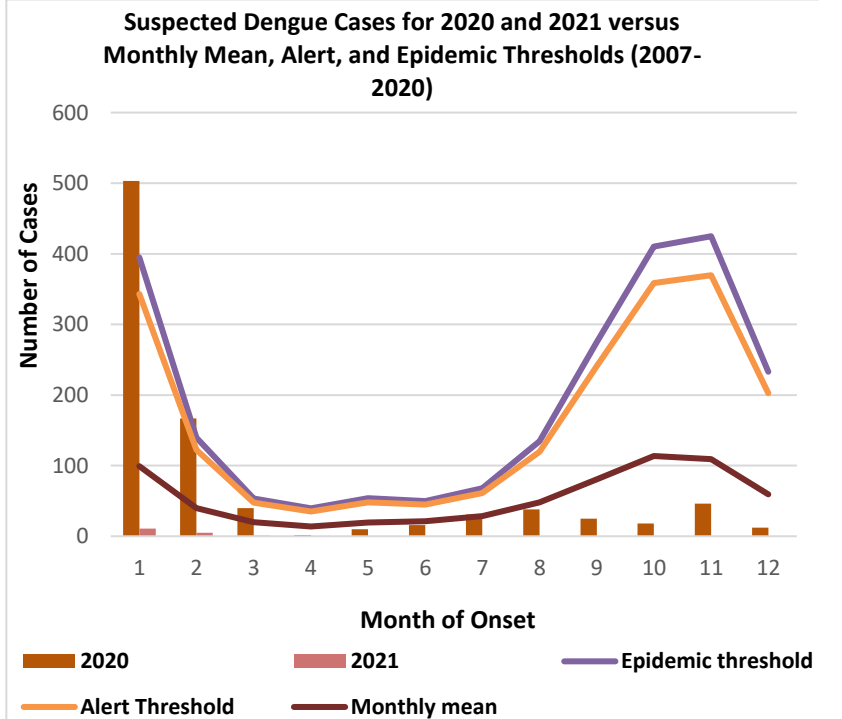
Reported suspected and confirmed dengue with symptom onset in week 16 of 2021

	2021*	
	EW 16	YTD
Total Suspected Dengue Cases	2	17
Lab Confirmed Dengue cases	0	0
CONFIRMED Dengue Related Deaths	0	0



Points to note:

- *Figure as at May 06, 2021
- Only PCR positive dengue cases are reported as confirmed.
- IgM positive cases are classified as presumed dengue.



7 NOTIFICATIONS-
All clinical sites

INVESTIGATION REPORTS- Detailed Follow up for all Class One Events

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RESEARCH PAPER

ABSTRACT

Effect of β -Hydroxy- β -Methyl Butyrate Supplementation with Resistance Exercise on Muscle Strength, Protein Metabolism and Body Composition in Underweight Adults with Sickle Cell Anaemia.

G Junor, M Reid, A Badaloo

Department of Caribbean Institute Health Research, Tropical Metabolism Research Unit, Faculty of Medical Sciences, University of the West Indies, Mona Campus, Jamaica

Email: graceann.junor@mymona.uwi.edu

Objective: Frequent wasting in sickle cell anaemia (SCA) correlates with poor health, despite normal dietary intake. We hypothesized that the anabolic agent, β -hydroxy- β -methyl-butyrate (HMB) with exercise will increase lean body mass (LBM) and muscle strength in association with reduced amino acids catabolism in adults with SCA (BMI < 18.5).

Method: The study design was a double-blinded, placebo-controlled intervention in two groups randomized to receive either 3 g/d of HMB (n = 12) or 3 g/d maltodextrin (n=12) as placebo. All participated in a standardized exercise programme. Measurements at pre- and post-intervention stages were: LBM using dual-energy x-ray absorption, muscle strength using 1-repetition maximum, L-[1-13C]-phenylalanine oxidation as a tracer for amino acids catabolism, blood chemistry and haematology tests. Data were analyzed using repeated linear measures mixed model.

Results: Seven participants did not complete the study (2 HMB, 5 placebo). LBM and strength were higher ($p < 0.05$) at post-intervention in both groups compared with pre-intervention. Although phenylalanine oxidation, was marginally higher in the HMB group at both stages compared to the maltodextrin group ($p = 0.07$), there was a tendency for an increase from stage 1 to 2 in the maltodextrin group, but no change in the HMB group. Blood cholesterol increased with HMB supplementation.

Conclusion: Resistance exercise improved LBM and strength, possibly augmented by a marginal synergistic effect of HMB through promoting protein synthesis and cholesterol for making LBM. The results support further investigation to explore the efficacy of the intervention as adjunctive treatment for SCA.



The Ministry of Health and Wellness
24-26 Grenada Crescent
Kingston 5, Jamaica
Tele: (876) 633-7924
Email: surveillance@moh.gov.jm



8 NOTIFICATIONS-
All clinical
sites



INVESTIGATION
REPORTS- Detailed Follow
up for all Class One Events



HOSPITAL
ACTIVE
SURVEILLANCE-
30 sites. Actively
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