WEEKLY EPIDEMIOLOGY BULLETIN

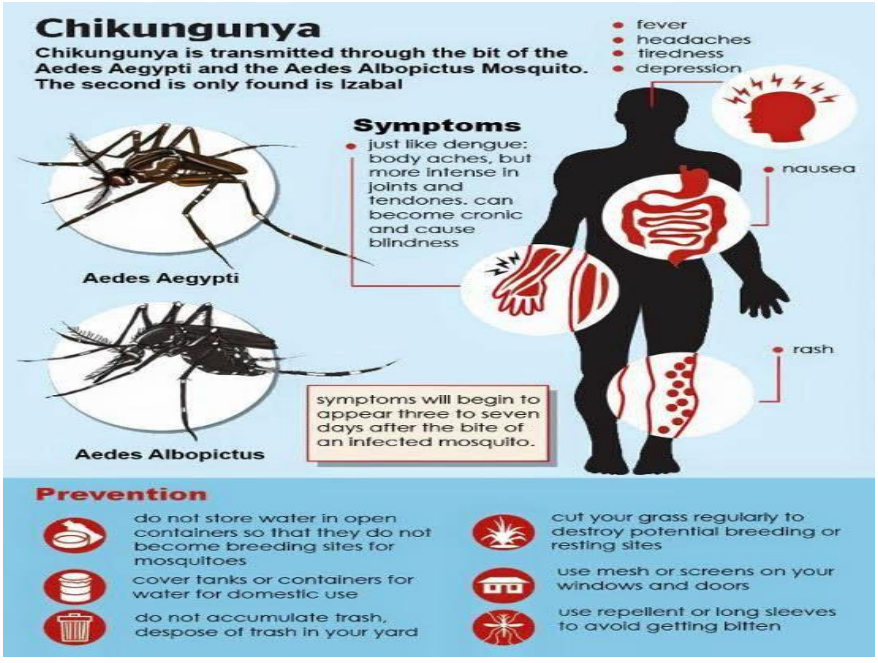
NATIONAL EPIDEMIOLOGY UNIT, MINISTRY OF HEALTH & WELLNESS, JAMAICA

Vector-Borne Diseases Series 4 of 10: Chikungunya

Overview: Chikungunya is a mosquito-borne viral disease that causes fever and severe joint pain. The disease was first recognized in 1952 during an outbreak in southern Tanzania. It is a ribonucleic acid (RNA) virus that belongs to the alphavirus genus of the family Togaviridae. The name "chikungunya" derives from a word in the Kimakonde language of southern Tanzania, meaning "to become contorted", and describes the stooped appearance of sufferers with joint pain (arthralgia). Chikungunya is transmitted to humans by the bites of infected female mosquitoes. Most commonly, the mosquitoes involved are Aedes aegypti and Aedes albopictus. These two species can also transmit other mosquito-borne viruses, including dengue. They bite throughout daylight hours, although there may be peaks of activity in the early morning and late afternoon. The disease occurs in Africa and Asia, although imported cases have been recorded in the WHO European Region and the Region of the Americas. Over 2 million cases have been reported since **2005.**

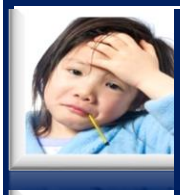
Signs and Symptoms: Symptoms of chikungunya appear between 4 and 7 days after the patient has been bitten by the infected mosquito. Chikungunya is rarely fatal. Most symptoms are generally self-limiting and last for 2–3 days. The disease is characterized by an abrupt onset of fever, which is frequently accompanied by joint pain. Other common signs and symptoms include muscle pain, headache, nausea, fatigue and rash. The joint pain is often debilitating and usually lasts for a few days to a few weeks. Most patients recover fully, but in some cases joint pain may persist for several months or even years. Occasional cases of eye, nervous system and heart complications have been reported, as well as gastrointestinal complaints. Serious complications are not common, but the disease can contribute to the cause of death in older people. Often symptoms in infected individuals are mild and the infection may go unrecognized or be misdiagnosed in areas where dengue also occurs.

Treatment: There is no specific antiviral drug treatment for chikungunya and there is no commercial chikungunya vaccine. Treatment is directed primarily at relieving the symptoms, including joint pain. This is largely achieved by using anti-pyretic drugs to reduce fever, by optimising the use of pain medication and by administering fluids. Aspirin and other non-steroidal anti-inflammatory drugs should not be administered until dengue can be ruled out in order to reduce the risk of bleeding. Prevention and control rely heavily on reducing the number of water-filled habitats that allow mosquitoes to breed. During outbreaks, insecticides may be sprayed to kill flying mosquitoes; applied to surfaces in and around the abovementioned water-filled habitats where the mosquitoes land; and used to treat these habitats to kill the immature larvae. For protection during outbreaks of chikungunya, clothing which minimizes skin exposure to day-biting mosquitoes is advised. Repellents can be applied to exposed skin or to clothing in strict accordance with product label instructions. For those who sleep during the daytime, particularly young children or sick or older people, insecticide-treated mosquito nets afford good protection. Mosquito coils or other insecticide vaporizers may also reduce indoor biting.



https://www.who.int/health-topics/chikungunya#tab=tab_1

EPI WEEK 21



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Sentinel Surveillance in Jamaica

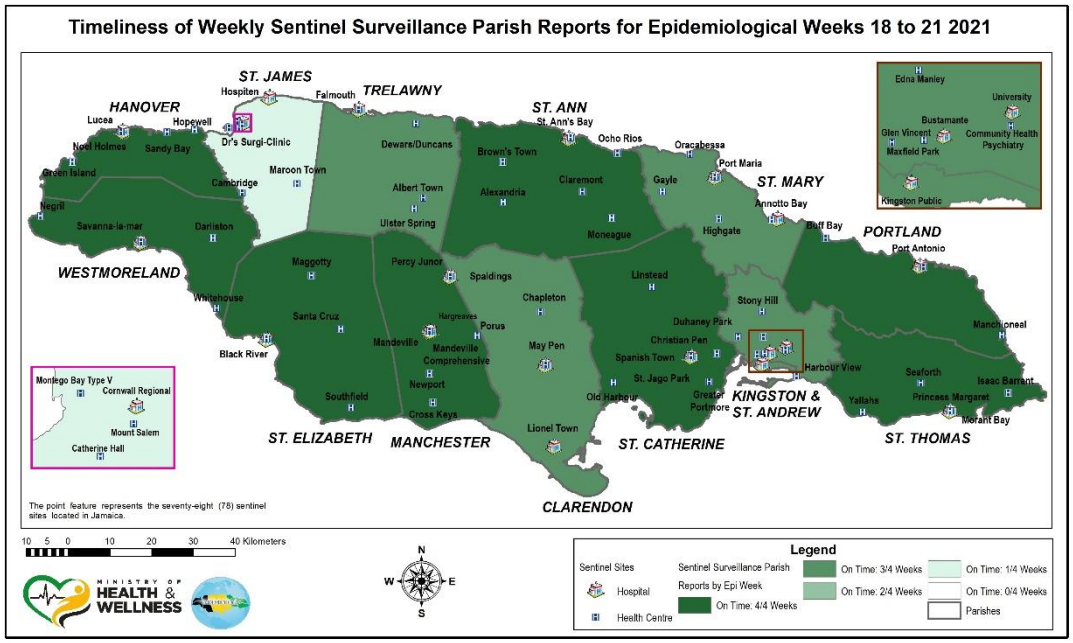
A syndromic surveillance system is good for early detection of and response to public health events.

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 – 18 2021 to 21 of 2021

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

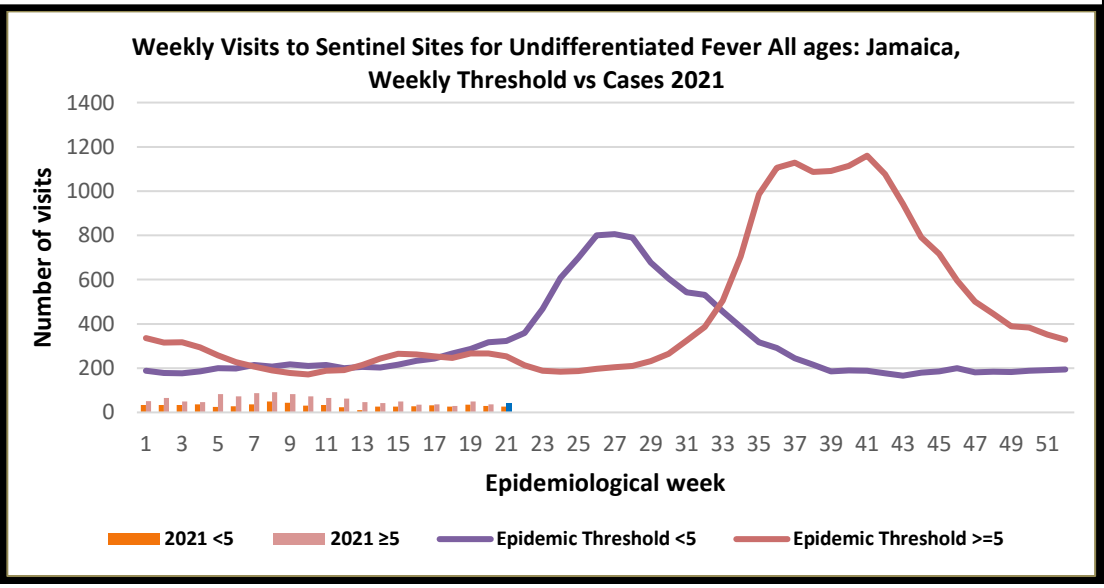


REPORTS FOR SYNDROMIC SURVEILLANCE

FEVER
Temperature of >38^0C /100.4^0F (or recent history of fever) with or without an obvious diagnosis or focus of infection.

KEY

VARIATIONS OF BLUE SHOW CURRENT WEEK



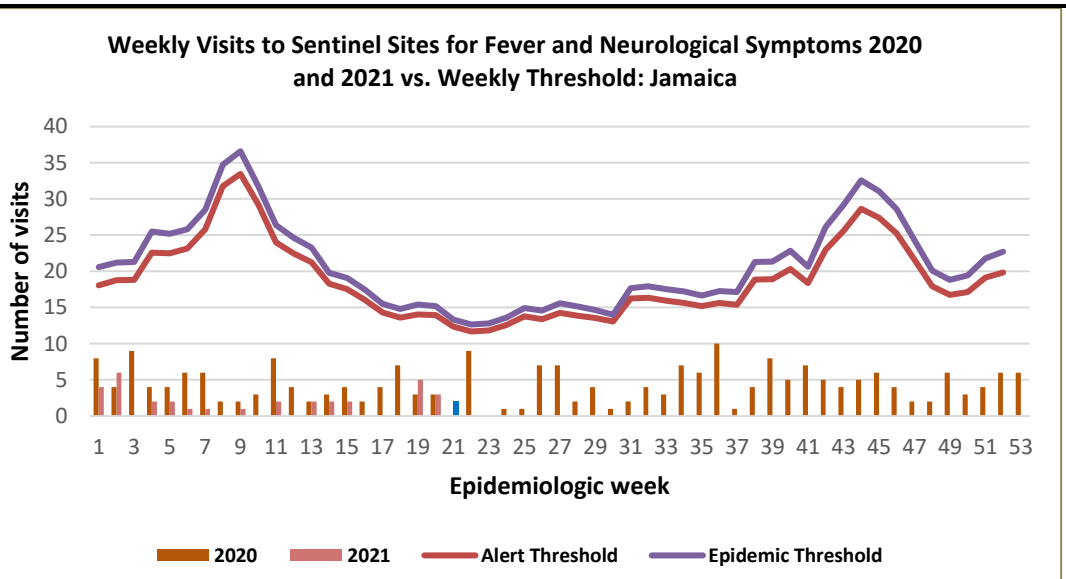
2 NOTIFICATIONS- All clinical sites

INVESTIGATION REPORTS- Detailed Follow up for all Class One Events

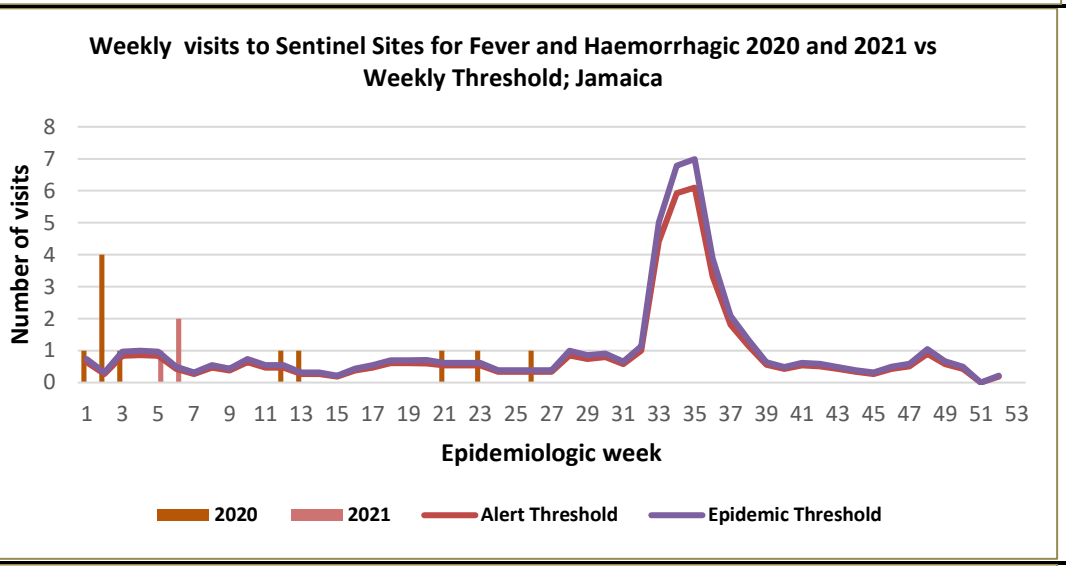
HOSPITAL ACTIVE SURVEILLANCE- 30 sites. Actively pursued

SENTINEL REPORT- 78 sites. Automatic reporting

FEVER AND NEUROLOGICAL
Temperature of >38^{0}C /100.4^{0}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).

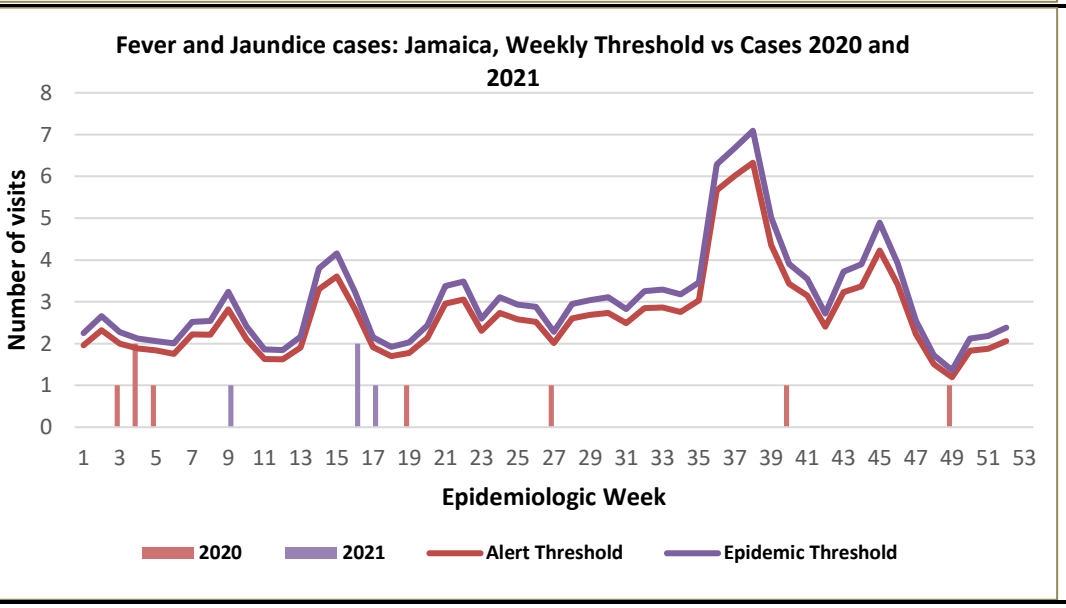


FEVER AND HAEMORRHAGIC
Temperature of >38^0*C* /100.4^0*F* (or recent history of fever) in a previously healthy person presenting with at least one haemorrhagic (bleeding) manifestation with or without jaundice.



FEVER AND JAUNDICE
Temperature of >38^0*C* /100.4^0*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.



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ACCIDENTS

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

KEY

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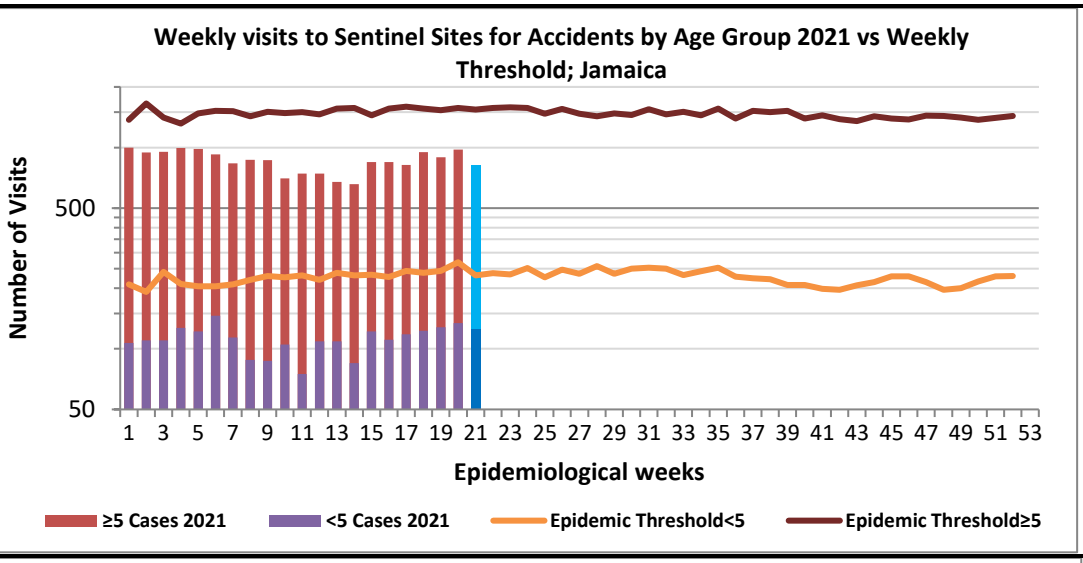
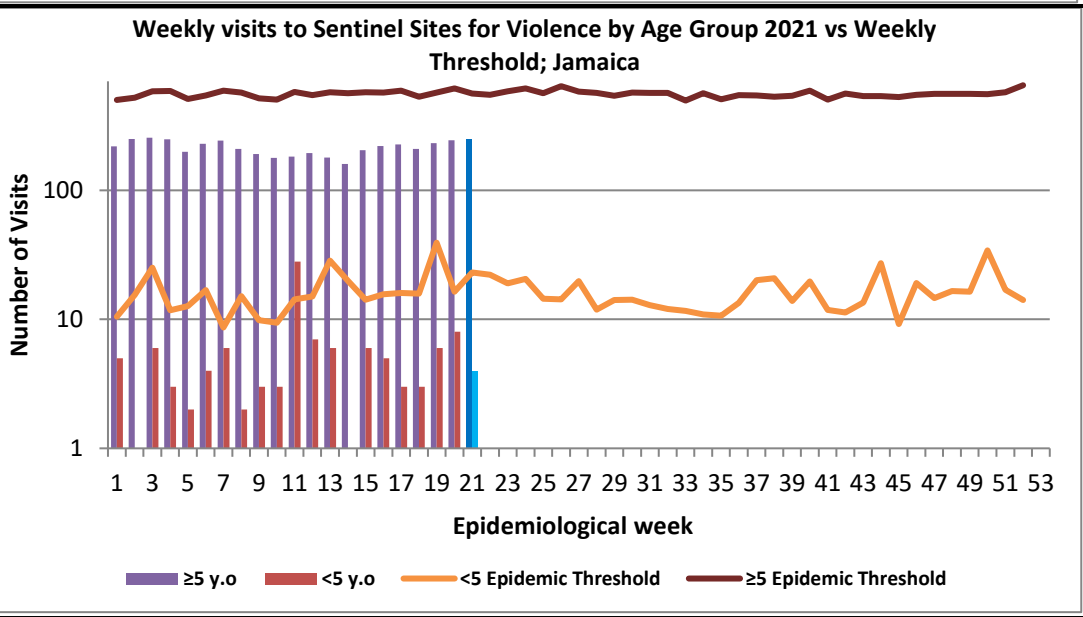


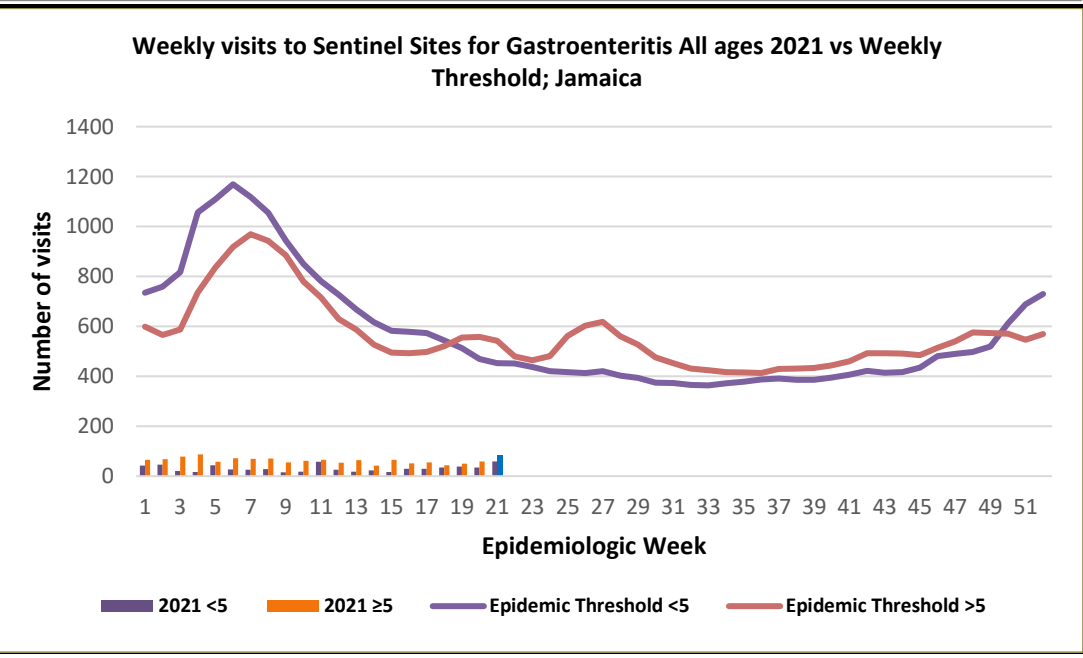
VIOLENCE

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.



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- CLASS ONE NOTIFIABLE EVENTS

	CLASS 1 EVENTS		Confirmed YTD[α] CURRENT YEAR 2021	PREVIOUS YEAR 2020
NATIONAL /INTERNATIONAL INTEREST	Accidental Poisoning		10[β]	56
	Cholera		0	0
	Dengue Hemorrhagic Fever[γ]		See Dengue page below	See Dengue page below
	Hansen's Disease (Leprosy)		0	0
	Hepatitis B		2	3
	Hepatitis C		0	0
	HIV/AIDS		NA	NA
	Malaria (Imported)		0	0
	Meningitis (Clinically confirmed)		0	1
EXOTIC/ UNUSUAL	Plague		0	0
H IGH 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]		15	16
	Ophthalmia Neonatorum		0	38
	Pertussis-like syndrome		0	0
	Rheumatic Fever		0	0
	Tetanus		0	0
	Tuberculosis		0	17
	Yellow Fever		0	0
	Chikungunya[ε]		0	0
	Zika Virus[θ]		0	0

Comments

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

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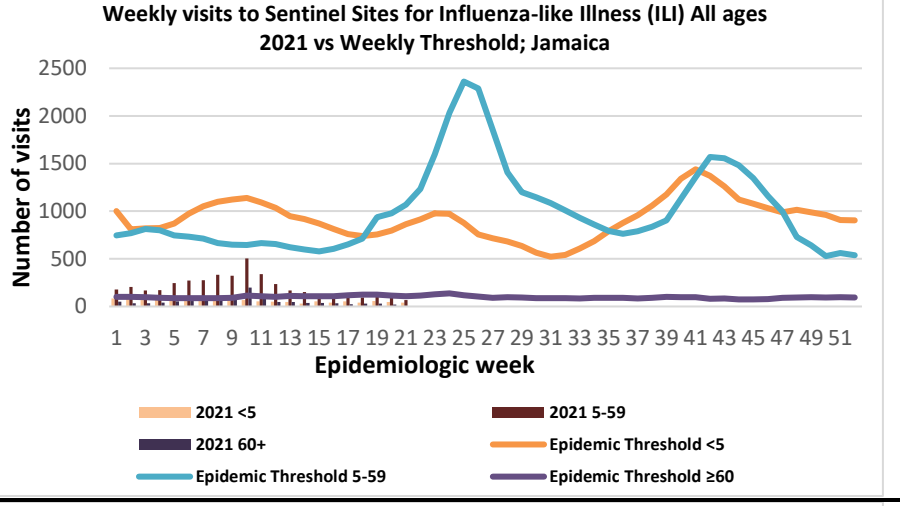
NATIONAL SURVEILLANCE UNIT INFLUENZA REPORT

EW 21

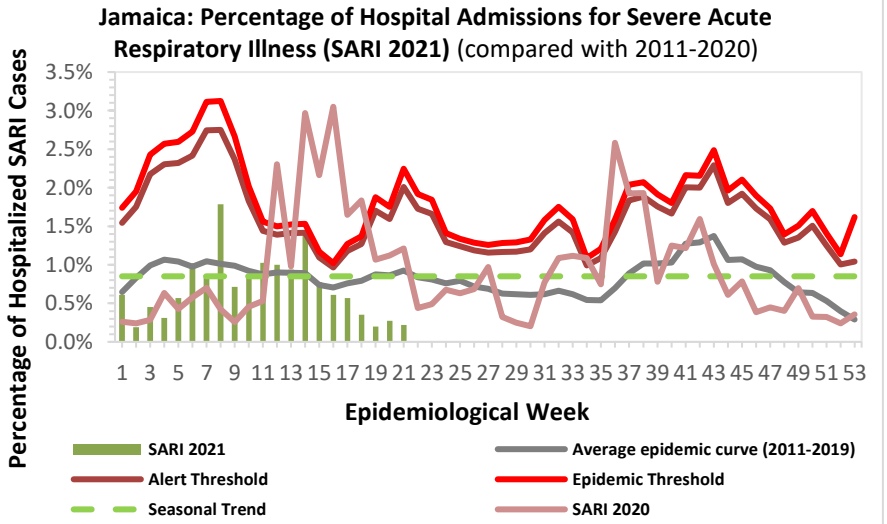
May 23, 2021 – May 29, 2021 Epidemiological Week 21

	EW 21	*YTD*
SARI cases	*03*	*217*
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*



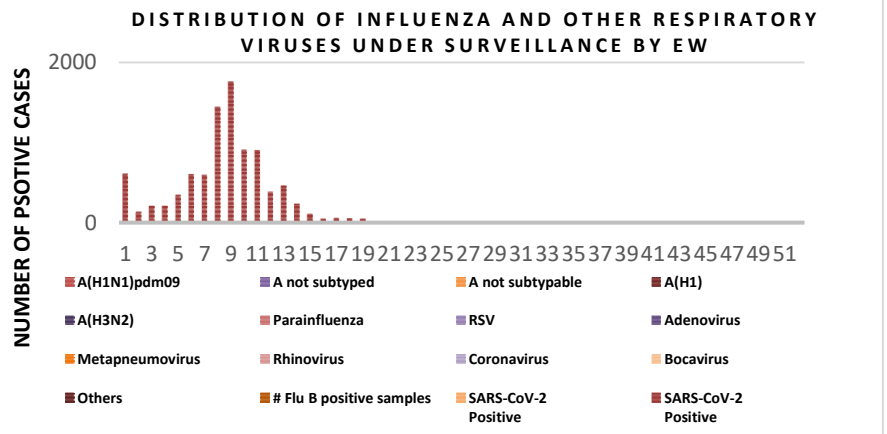
Epi Week Summary

During EW 21, 03 (three) SARI admissions were reported.



Caribbean Update EW 21

Caribbean: Influenza activity remained low. In Haiti, SARS-CoV-2 activity continue elevated and increasing.



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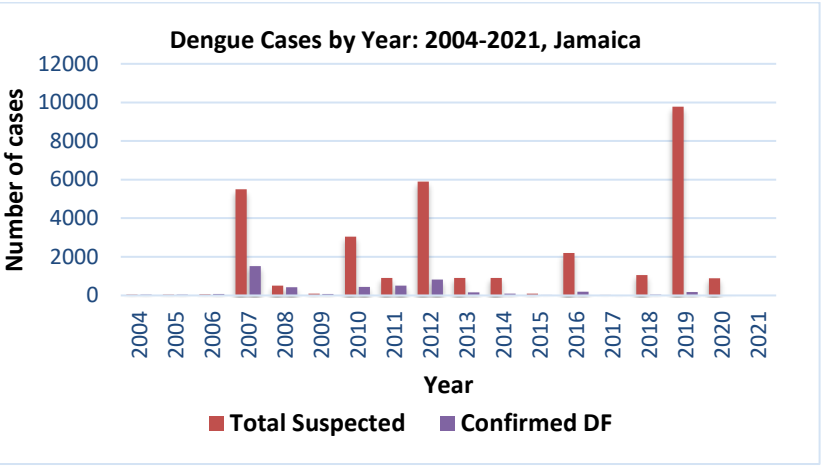
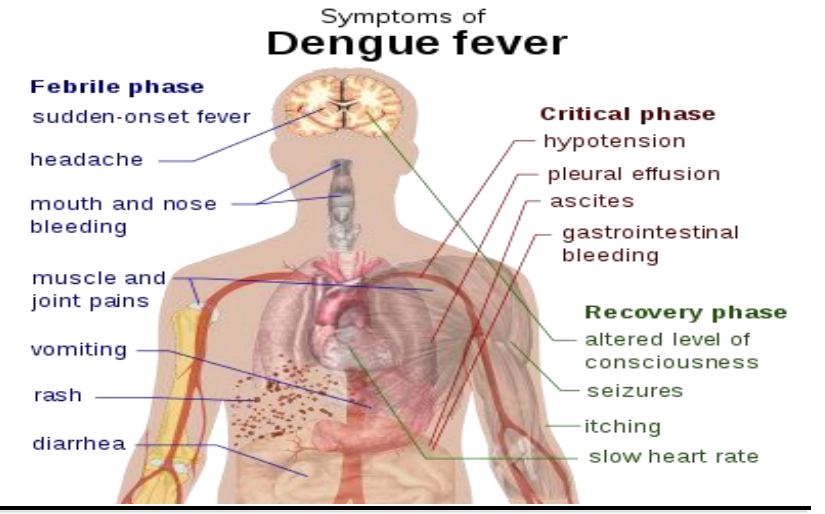
Dengue Bulletin

May 23, 2021 – May 29, 2021 Epidemiological Week 21 | Epidemiological Week 21



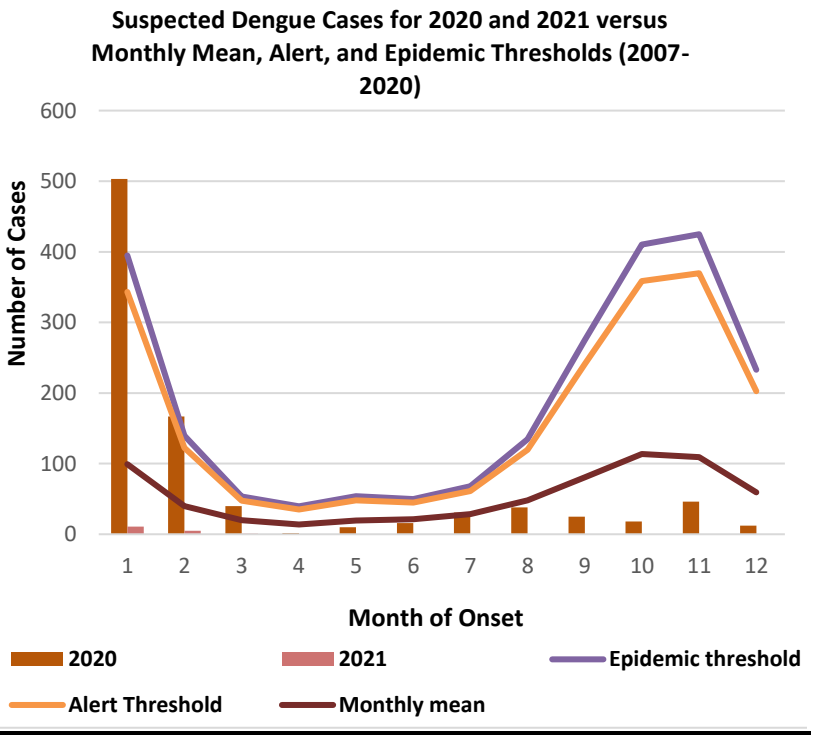
Reported suspected and confirmed dengue with symptom onset in week 21 of 2021

	2021*	
	EW 21	YTD
Total Suspected Dengue Cases	0	17
Lab Confirmed Dengue cases	0	0
CONFIRMED Dengue Related Deaths	0	0



Points to note:

- *Figure as at May 21, 2021
- Only PCR positive dengue cases are reported as confirmed.
- IgM positive cases are classified as presumed dengue.



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RESEARCH PAPER

ABSTRACT

Assessment of the Gut Microbiome Composition of Healthy Undergraduate Science Students at the University of the West Indies, Mona, Jamaica.

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[1]Department of Basic Medical Sciences, Biochemistry Section, Faculty of Medical Sciences, University of the West Indies, Mona Jamaica, [2]Department of Ecosystem and Public Health, Faculty of Veterinary Medicine, University of Calgary, Canada.

Background: The gut microbiome is a diverse ecosystem with 10^{14} bacterial cells in symbiotic relationship with their host and are essential in maintaining a healthy status. These bacteria have also been implicated in diseases such as inflammatory bowel disease, irritable bowel syndrome, obesity and diabetes. The gut microbiome is generally stable but can be affected by factors such as culture, diet, geography and demographics.

Objectives: Consequently, this pilot study sought to assess the gut microbiome composition of healthy undergraduate science students, ages 18 to 30, attending The University of the West Indies, Mona, Jamaica with a view to leverage this understanding to promote students' health.

Methods: After obtaining ethical approval, participants were asked to provide written consent and responses to a questionnaire and a stool sample. Total DNA was extracted and purified from stool samples, PCR amplified and sequenced.

Results: *Firmicutes*, *Bacteroides*, *Proteobacteria*, and *Actinobacteria* were the most abundant phyla observed, with *Firmicutes* in the highest proportion. Generally, the organisms in the proportions observed, were indicative of a healthy status in the population of students sampled. However, higher proportion of *Firmicutes* relative to *Bacteroides* are known to be associated with obesity and overweight, which have significant risk for cardiovascular complications.

Conclusion: Comparisons such as body mass index, gender, area of residence, vaginal vs Caesarian section birth, or whether vegetarian or not, did not show any significant differences in population diversity. Given the current knowledge base, these assessments can assist in the improvement and maintenance of health and wellness and are becoming important in preventive medicine.

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