WEEKLY EPIDEMIOLOGY BULLETIN

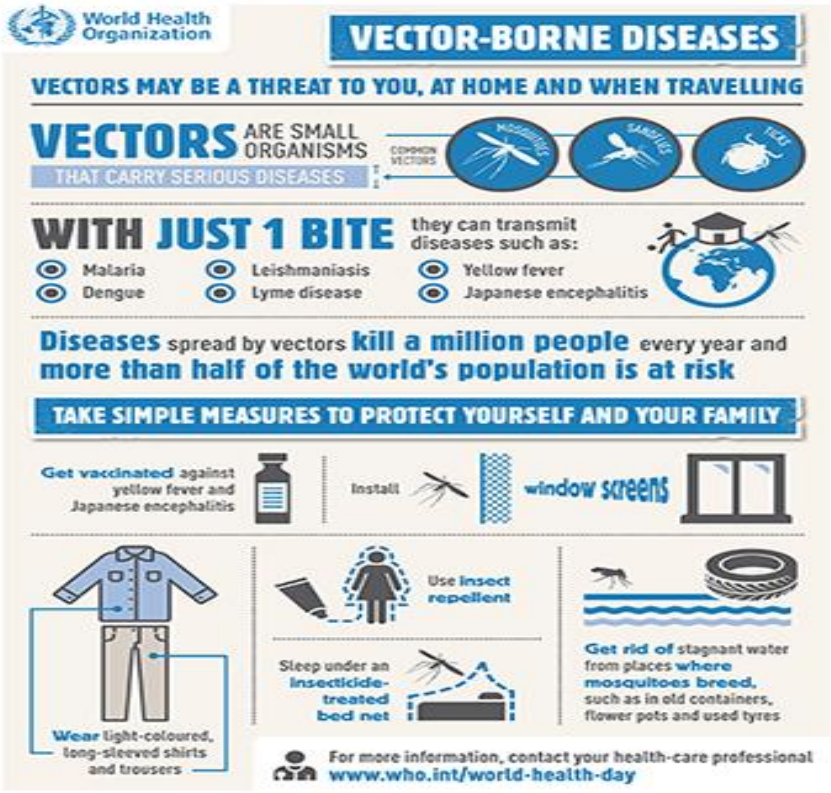
NATIONAL EPIDEMIOLOGY UNIT, MINISTRY OF HEALTH & WELLNESS, JAMAICA

Vector-Borne Diseases Series: Introduction

Key Facts: 1. Vector-borne diseases account for more than 17% of all infectious diseases, causing more than 700 000 deaths annually. They can be caused by either parasites, bacteria or viruses. **2.** Malaria is a parasitic infection transmitted by Anopheline mosquitoes. It causes an estimated 219 million cases globally, and results in more than 400,000 deaths every year. Most of the deaths occur in children under the age of 5 years. **3.** Dengue is the most prevalent viral infection transmitted by Aedes mosquitoes. More than 3.9 billion people in over 129 countries are at risk of contracting dengue, with an estimated 96 million symptomatic cases and an estimated 40,000 deaths every year. **4.** Other viral diseases transmitted by vectors include chikungunya fever, Zika virus fever, yellow fever, West Nile fever, Japanese encephalitis (all transmitted by mosquitoes), tick-borne encephalitis (transmitted by ticks). **5.** Many of vector-borne diseases are preventable, through protective measures, and community mobilisation.

Vectors: Vectors are living organisms that can transmit infectious pathogens between humans, or from animals to humans. Many of these vectors are bloodsucking insects, which ingest disease-producing microorganisms during a blood meal from an infected host (human or animal) and later transmit it into a new host, after the pathogen has replicated. Often, once a vector becomes infectious, they are capable of transmitting the pathogen for the rest of their life during each subsequent bite/blood meal.

Vector-borne diseases: Vector-borne diseases are human illnesses caused by parasites, viruses and bacteria that are transmitted by vectors. Every year there are more than 700,000 deaths from diseases such as malaria, dengue, schistosomiasis, human African trypanosomiasis, leishmaniasis, Chagas disease, yellow fever, Japanese encephalitis and onchocerciasis. The burden of these diseases is highest in tropical and subtropical areas, and they disproportionately affect the poorest populations. Since 2014, major outbreaks of dengue, malaria, chikungunya, yellow fever and Zika have afflicted populations, claimed lives, and overwhelmed health systems in many countries. Other diseases such as Chikungunya, leishmaniasis and lymphatic filariasis cause chronic suffering, life-long morbidity, disability and occasional stigmatisation. Distribution of vector-borne diseases is determined by a complex set of demographic, environmental and social factors.



https://www.who.int/news-room/fact-sheets/detail/vector-borne-diseases

EPI WEEK 17

Released June 07, 2021 ISSN 0799-3927

SENTINEL SYNDROMIC SURVEILLANCE

Sentinel Surveillance in Jamaica

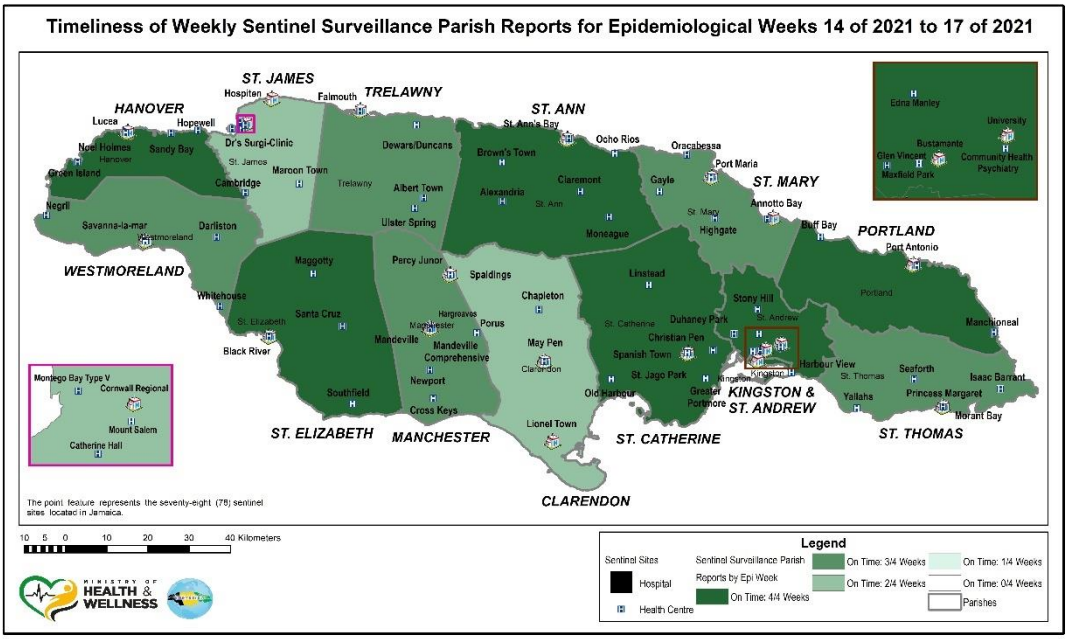
A syndromic surveillance system is good for early detection of and response to public health events.

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 – 14 2021 to 17 of 2021

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

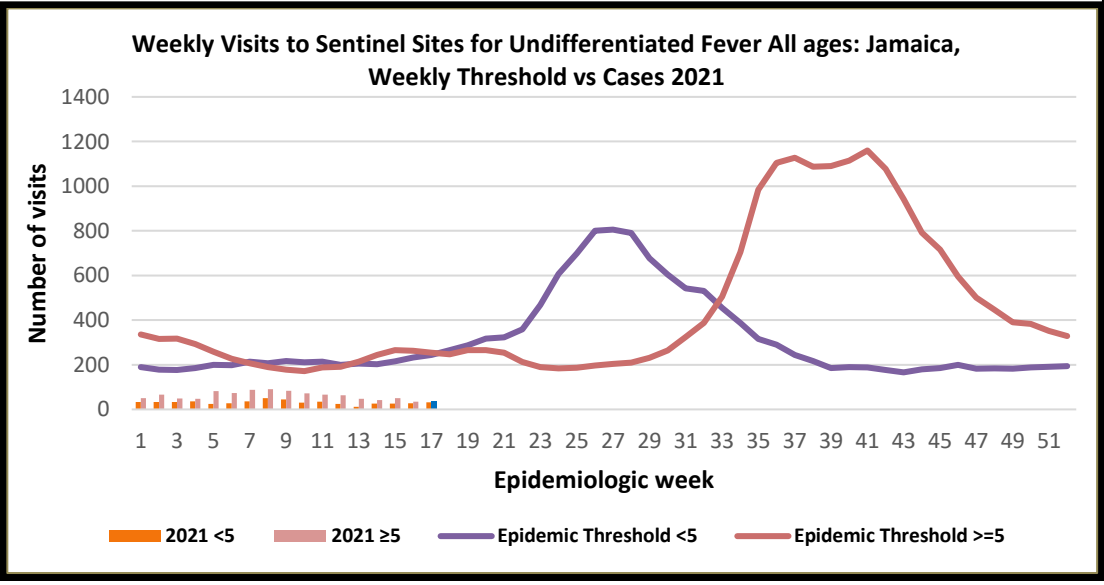


REPORTS FOR SYNDROMIC SURVEILLANCE

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



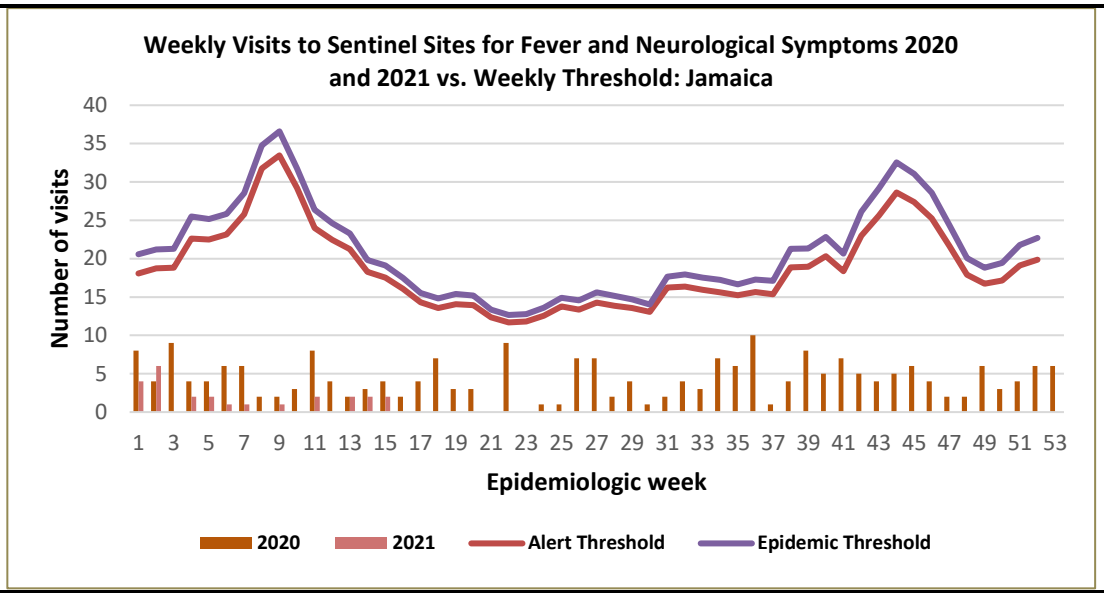
2 NOTIFICATIONS- All clinical sites

INVESTIGATION REPORTS- Detailed Follow up for all Class One Events

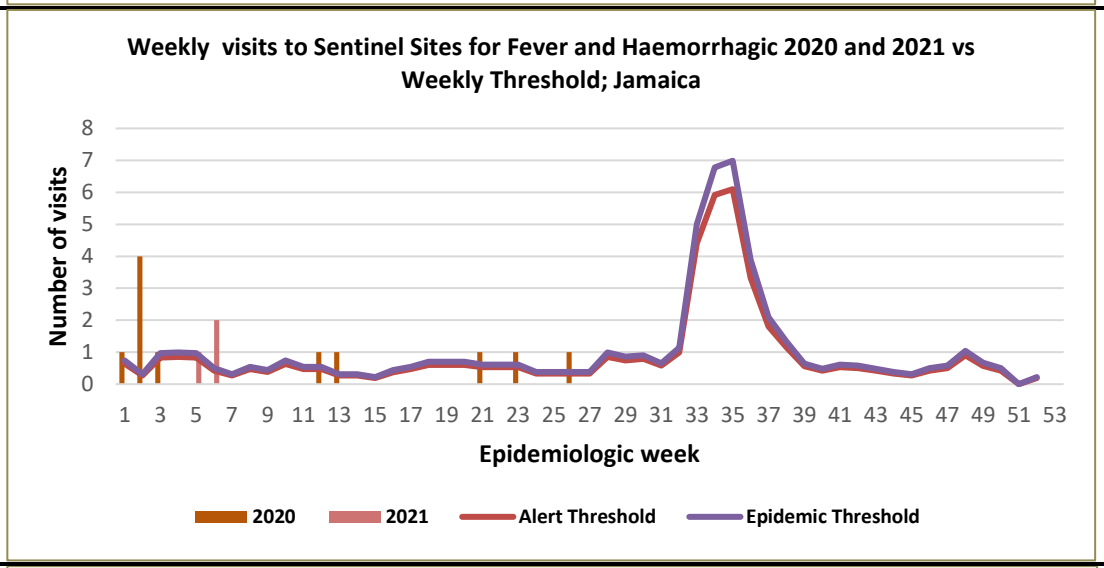
HOSPITAL ACTIVE SURVEILLANCE- 30 sites. Actively pursued

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).

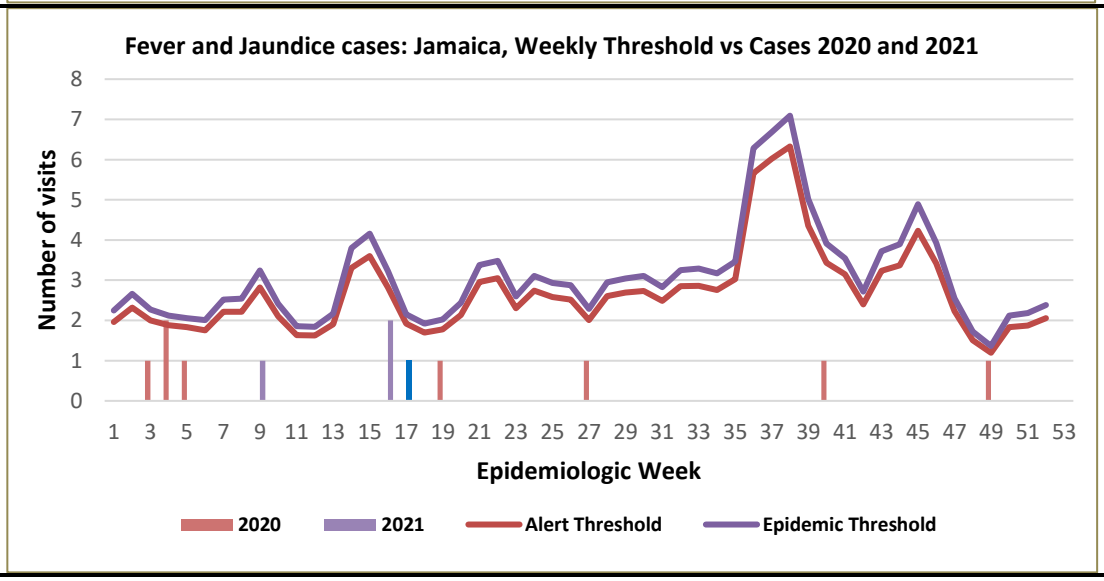


FEVER AND HAEMORRHAGIC
Temperature of >38^0C /100.4^0F (or recent history of fever) in a previously healthy person presenting with at least one haemorrhagic (bleeding) manifestation with or without jaundice.



FEVER AND JAUNDICE
Temperature of >38^0C /100.4^0F (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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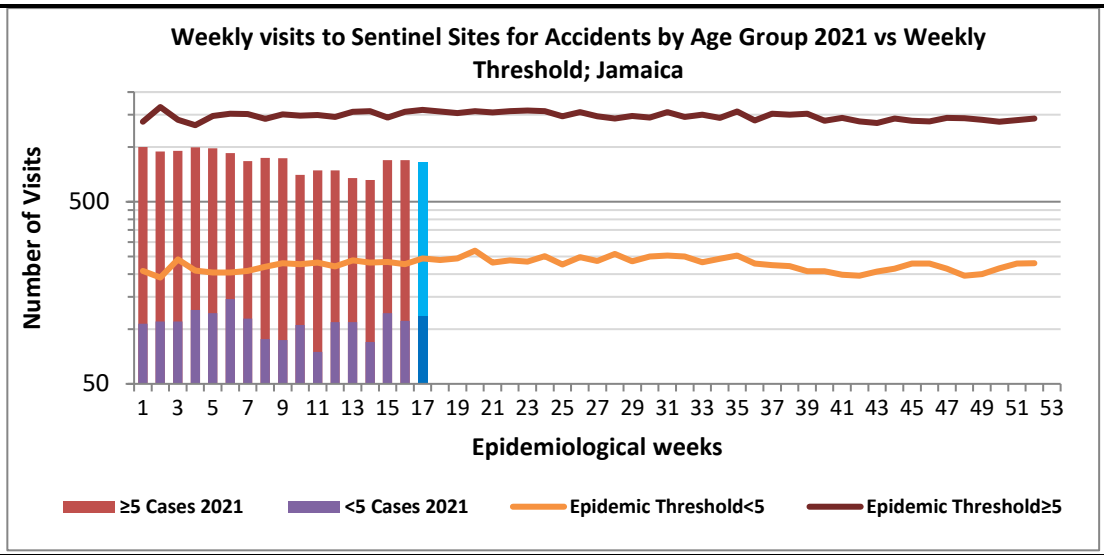
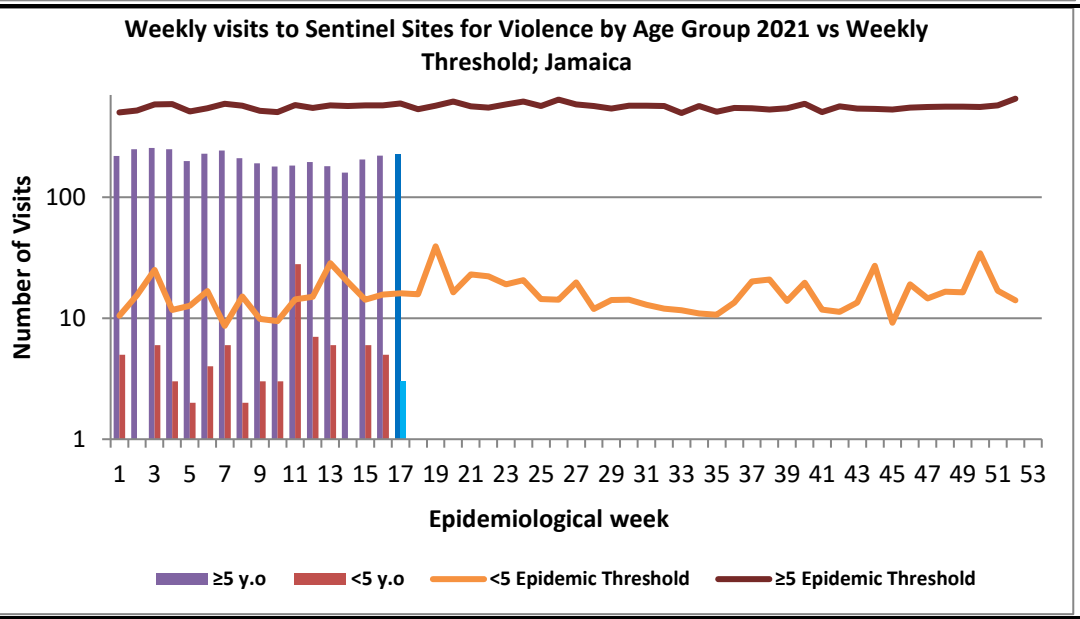


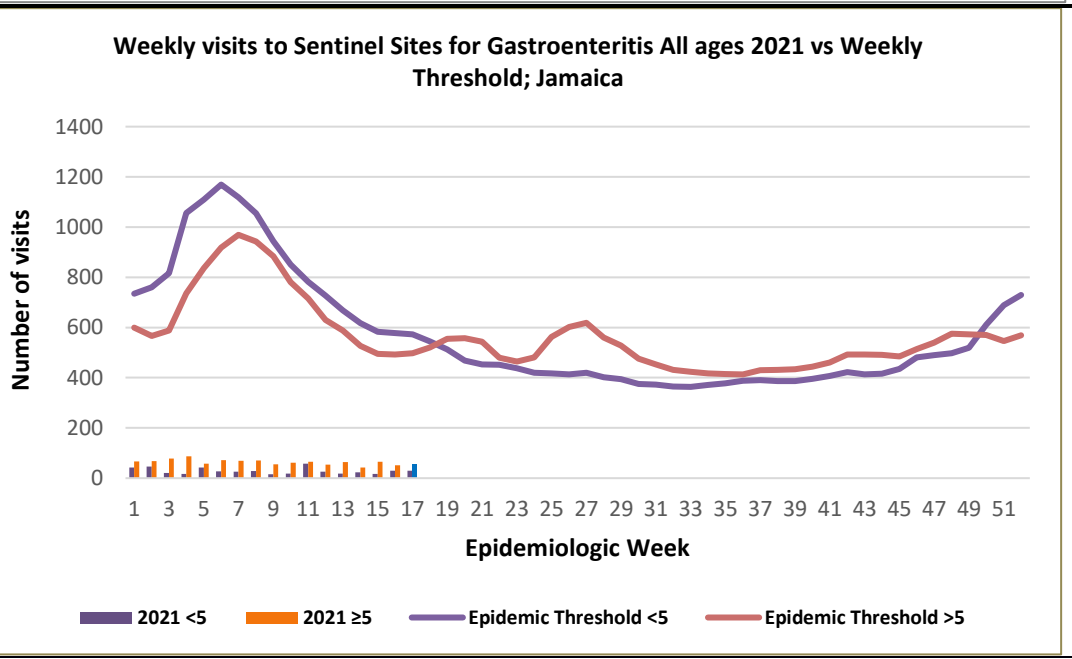
VIOLENCE

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		0[β]	39
	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
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]		7	15
	Ophthalmia Neonatorum		0	38
	Pertussis-like syndrome		0	0
	Rheumatic Fever		0	0
	Tetanus		0	0
	Tuberculosis		0	13
	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

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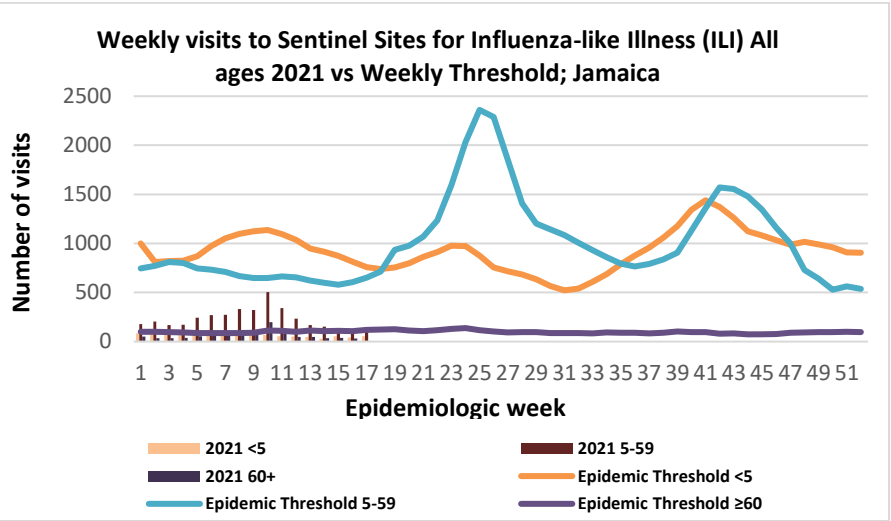
NATIONAL SURVEILLANCE UNIT INFLUENZA REPORT

EW 17

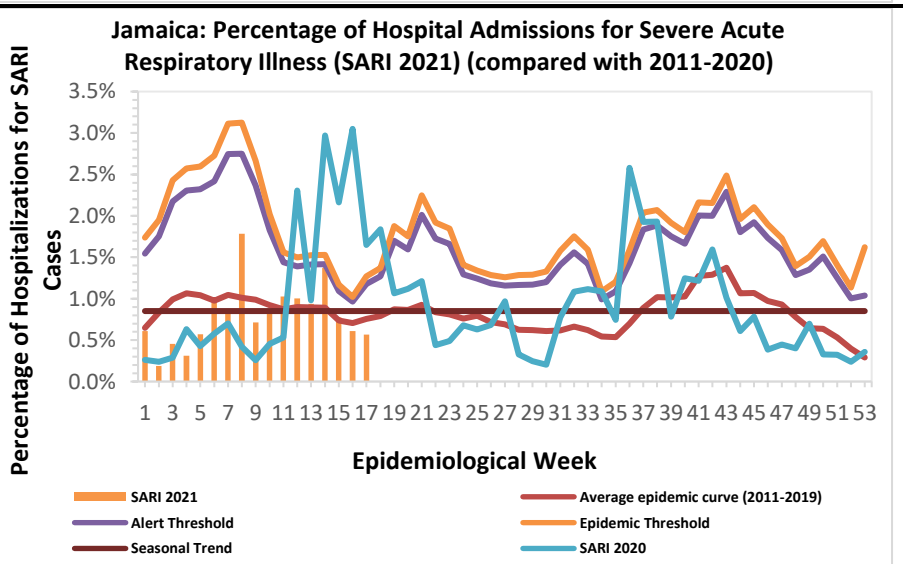
April 25, 2021 – May 01, 2021 Epidemiological Week 17

	EW 17	*YTD*
SARI cases	*08*	*202*
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*



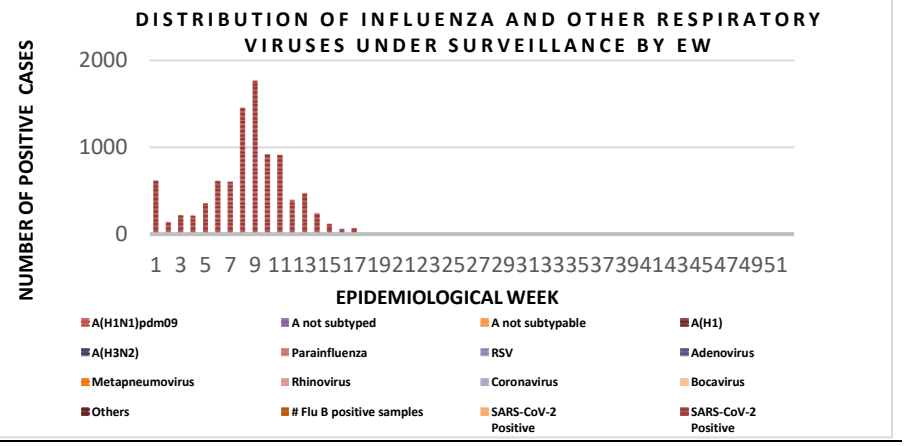
Epi Week Summary

During EW 17, 08 (eight) SARI admissions were reported.



Caribbean Update EW 17

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.



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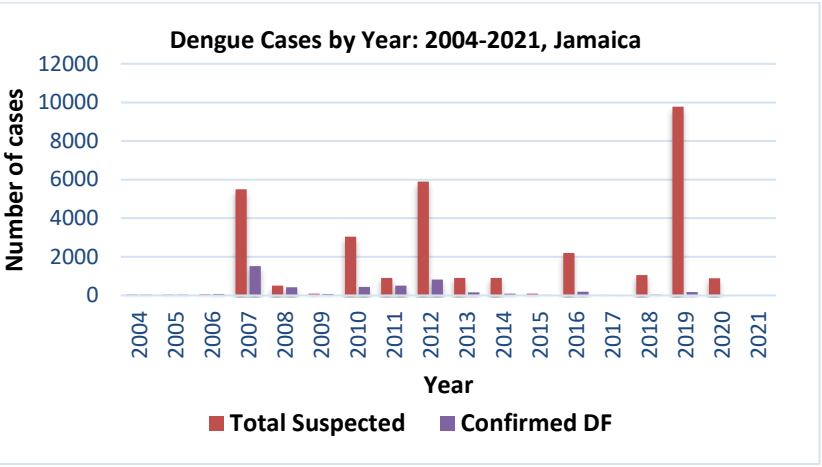
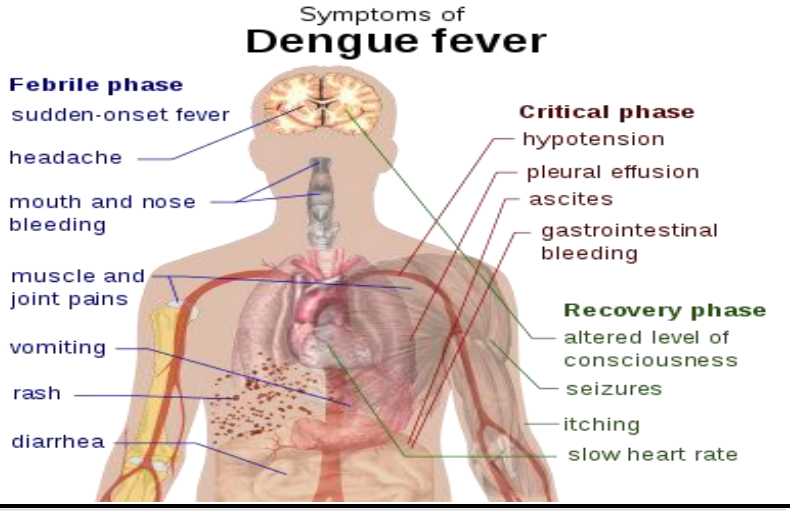
Dengue Bulletin

April 25, 2020 – May 01, 2021 Epidemiological Week 17 | Epidemiological Week 17



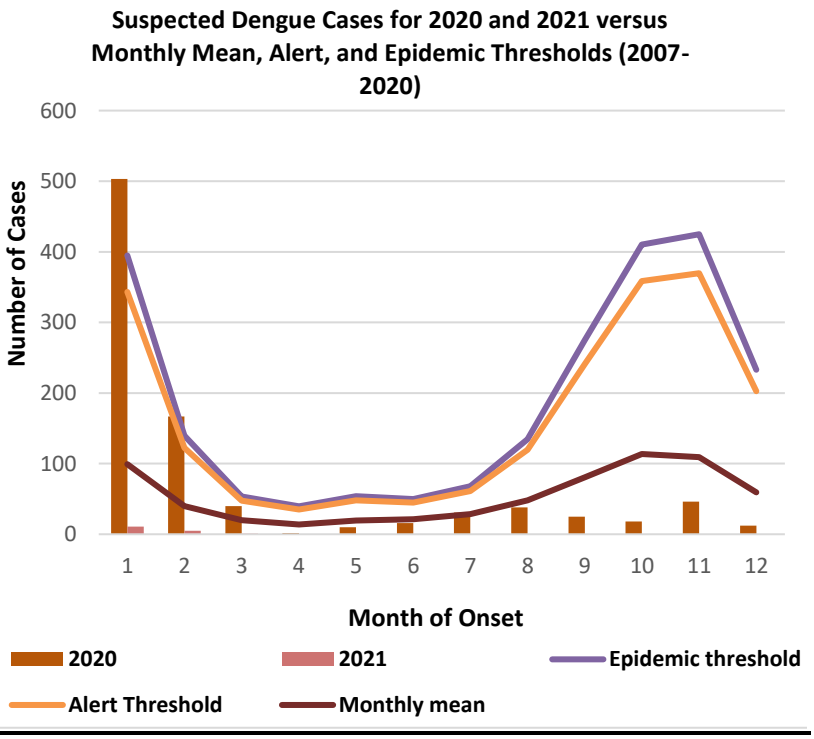
Reported suspected and confirmed dengue with symptom onset in week 17 of 2021

	2021*	
	EW 17	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 06, 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

A Comparison of Body Composition and Muscle Quality as Correlates of Performance in Junior Elite Track and Field Athletes.

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Background: Investigating correlates of performance specific to the junior athletic demographic, may improve training adaptability thereby reducing the high incidence of sports injuries.

Objective: To compare changes in body composition and muscle quality as correlates of performance in elite junior track and field athletes.

Method: Fifty-four (54) junior elite track and field athletes participated in the study. Body composition was assessed using the two-compartment model. Muscle thickness (MT) and echo intensity (EI) were used to assess muscle quality. Measurements were taken at two phases of the track and field season: preparative training phase (preseason) and in-season phase (pre-competition and peak competition). Scoring points of the International Association of Athletics Federation (IAAF) were used as an individual measure of performance.

Results: Approximately 54.50% of the athletes had improved performance, 45.50% did not. Change in waist MT significantly correlated (r=-0.43) with performance. A significant positive correlation between improvement in performance and favorable changes in thigh MT was observed for both jump (r=0.49) and middle distance (r= -0.833) athletes. Improvement in thigh EI significantly correlated (r= -0.82,) with performance in middle distance athletes. Body composition variables significantly correlated with physiological fitness, however no statistical correlation was observed with competition performance.

Conclusion: Improvements in performance was predominantly associated with muscle quality. It may then be assumed that changes in muscle quality over an athletic season may greater influence athletic performance over changes in body composition. As such, coaches should consider the incorporation of these measures in training regimes for performance assessment and evaluation of training adaptability in junior elite athletes.

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