

WEEKLY EPIDEMIOLOGY BULLETIN

NATIONAL EPIDEMIOLOGY UNIT, MINISTRY OF HEALTH & WELLNESS, JAMAICA

EPI WEEK 19

Vector-Borne Diseases Series 2 of 10: Malaria

Key facts : 1. Malaria is a life-threatening disease caused by parasites that are transmitted to people through the bites of infected mosquitoes. 2. A child dies of malaria every 2 minutes. 3. In the Americas, 765,000 cases of malaria and around 340 deaths were reported in 2018. 4. In 2017 there were 219 million cases of malaria globally, causing nearly 435,000 deaths, mostly among African children. 5. Malaria is preventable and curable. 6. Approximately half of the world's population is at risk of malaria, particularly those living in lower-income countries. In the Americas, 138 million people live in areas at risk of malaria. 7. Travelers from malaria-free areas to disease "hot spots" are especially vulnerable to the disease. 8. Malaria takes an economic toll - cutting economic growth rates by as much as 1.3% in countries with high disease rates.

Overview: Malaria is a life-threatening disease caused by parasites that are transmitted to people through the bites of infected female Anopheles mosquitoes. It is preventable and curable. There are 5 parasite species that cause malaria in humans, and 2 of these species – Plasmodium falciparum and Plasmodium vivax – pose the greatest threat. In 2019, nearly half of the world's population was at risk of malaria. Most cases and deaths occur in sub-Saharan Africa. However, the WHO regions of South-East Asia, Eastern Mediterranean, Western Pacific, and the Americas also report significant numbers of cases and deaths. There were an estimated 229 million cases of malaria in 2019, and the estimated number of malaria deaths stood at 409 000. The WHO African Region carries a disproportionately high share of the global malaria burden. In 2019, the region was home to 94% of malaria cases and deaths. Children under 5 years of age are the most vulnerable group affected by malaria; in 2019, they accounted for about two thirds of all malaria deaths worldwide.

Symptoms: Malaria is an acute febrile illness. In a non-immune individual, symptoms usually appear 10–15 days after the infective mosquito bite. The first symptoms – fever, headache, and chills – may be mild and difficult to recognize as malaria. If not treated within 24 hours, Plasmodium falciparum malaria can progress to severe illness, and lead to death. Children with severe malaria frequently develop one or more of the following symptoms: severe anaemia, respiratory distress in relation to metabolic acidosis, or cerebral malaria. In adults, multi-organ failure is also frequent. In malaria endemic areas, people may develop partial immunity, allowing asymptomatic infections to occur. Some population groups are at considerably higher risk of contracting malaria, and developing severe disease, than others. These include infants, children under 5 years of age, pregnant women and patients with HIV/AIDS, as well as non-immune migrants, mobile populations and travellers. National malaria control programmes need to take special measures to protect these population groups from malaria infection, taking into consideration their specific circumstances.

Treatment: Malaria is a preventable and treatable disease. Early diagnosis and treatment of malaria reduces disease and prevents deaths, and also contributes to reducing transmission. The best available treatment, particularly for Plasmodium falciparum malaria, is artemisinin-based combination therapy (ACT). Antimalarial medicines can also be used to prevent malaria. For travellers, malaria can be prevented through chemoprophylaxis, which suppresses the blood stage of malaria infections, thereby preventing malaria disease. Prior to their travel to malaria-endemic countries or regions, individuals should consult their national disease control centres, or other institutions offering travel advice, for information regarding the preventive measures that should be taken.



SYNDROMES

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CLASS 1 DISEASES

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INFLUENZA

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DENGUE FEVER

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GASTROENTERITIS

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RESEARCH PAPER

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MALARIA FACTS
Malaria is a serious disease that is PREVENTABLE and TREATABLE.

97 countries and territories had ongoing malaria transmission in 2015.¹

Every year, over **10,000** travellers are reported to become ill with malaria after returning home.²

EARLY DIAGNOSIS and prompt treatment prevent deaths

Malaria is caused by Plasmodium parasites. Humans get infected via mosquito bites.

3.2 billion people are at risk of malaria worldwide.¹

every **2 minutes** a child dies from malaria in Sub-Saharan Africa.³

The 'ABCD' of Malaria Prevention

- A AWARENESS** Be aware of the risk and the symptoms.
- B BITE PREVENTION** Avoid being Bitten by mosquitoes, especially between dusk and dawn.
- C CHEMOPROPHYLAXIS** If prescribed for you, use Chemoprophylaxis (preventive medication) to prevent infection.
- D DIAGNOSIS** Immediately seek Diagnosis and treatment if a fever develops (do not wait or ignore fever) in a malaria area. (up to one year after departure).

Pregnant women are at **HIGH RISK** of dying from complications of severe malaria.⁴

SYMPTOMS
MILD / MODERATE: fever, sweating, headache, muscle aches.
SEVERE: fatigue, shaking, rigors, chills, vomiting, diarrhoea, fatal if not treated.

DO NOT IGNORE SYMPTOMS. Go straight to the doctor.

Sources: 1. World Health Organization, Malaria (Fact Sheet), January 2010. 2. World Health Organization, Malaria (Fact Sheet), January 2010. 3. World Health Organization, Malaria (Fact Sheet), January 2010. 4. World Health Organization, Malaria (Fact Sheet), January 2010.

This infographic has been developed for educational purposes only and is not intended to replace professional medical advice. For more information on malaria prevention, visit www.who.int/malaria or contact your national malaria control programme.

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SENTINEL SYNDROMIC SURVEILLANCE

Sentinel Surveillance in Jamaica



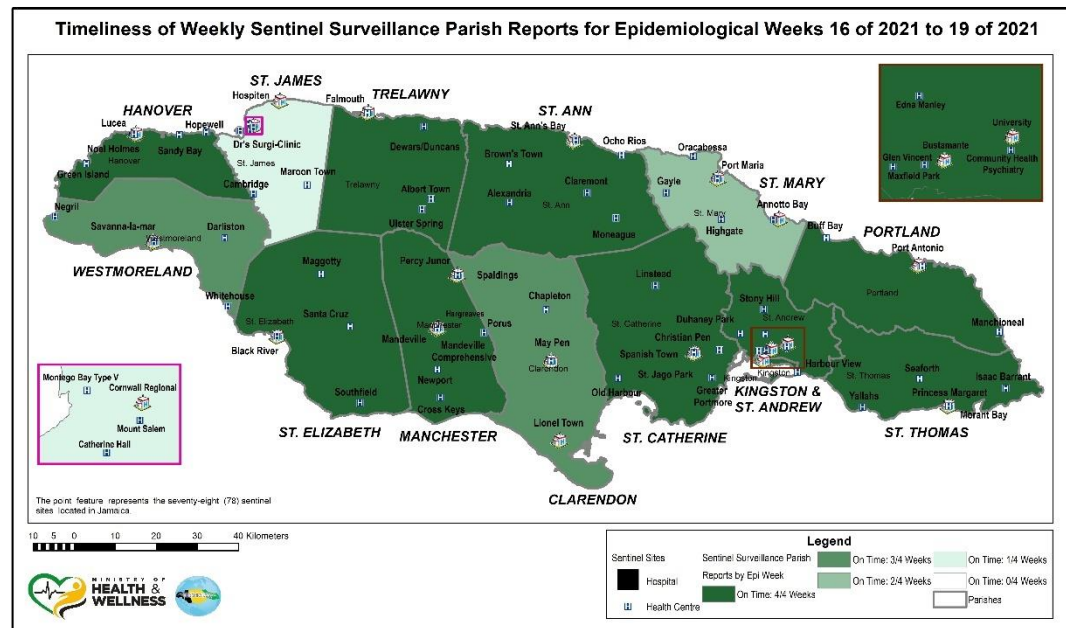
A syndromic surveillance system is good for early detection of and response to public health events.

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 - 16 of 2021 to 19 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

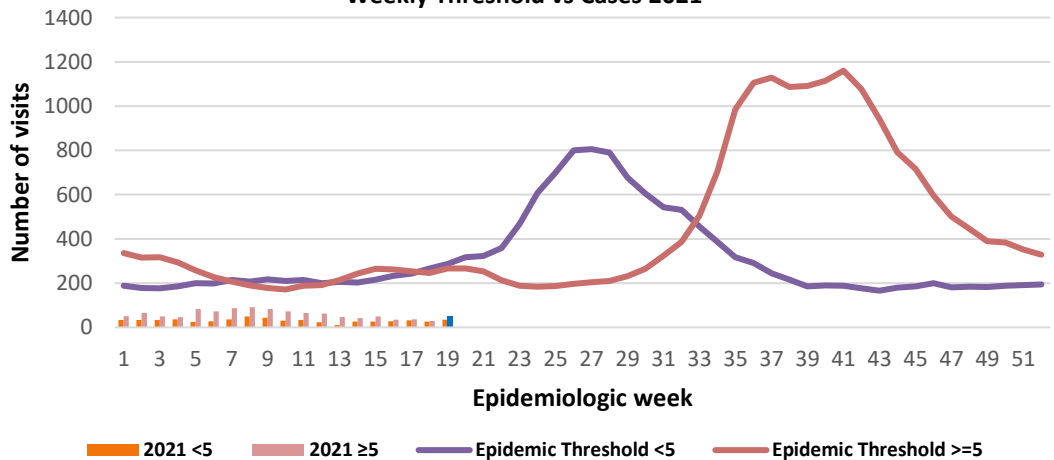
Temperature of $>38^{\circ}\text{C}$ / 100.4°F (or recent history of fever) with or without an obvious diagnosis or focus of infection.



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



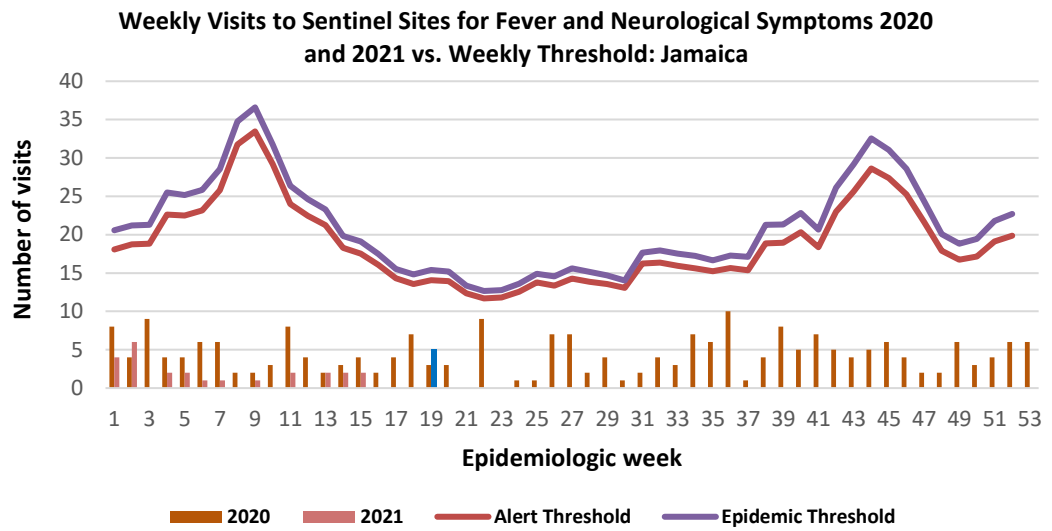
HOSPITAL ACTIVE SURVEILLANCE- 30 sites. Actively pursued



SENTINEL REPORT- 78 sites. Automatic reporting

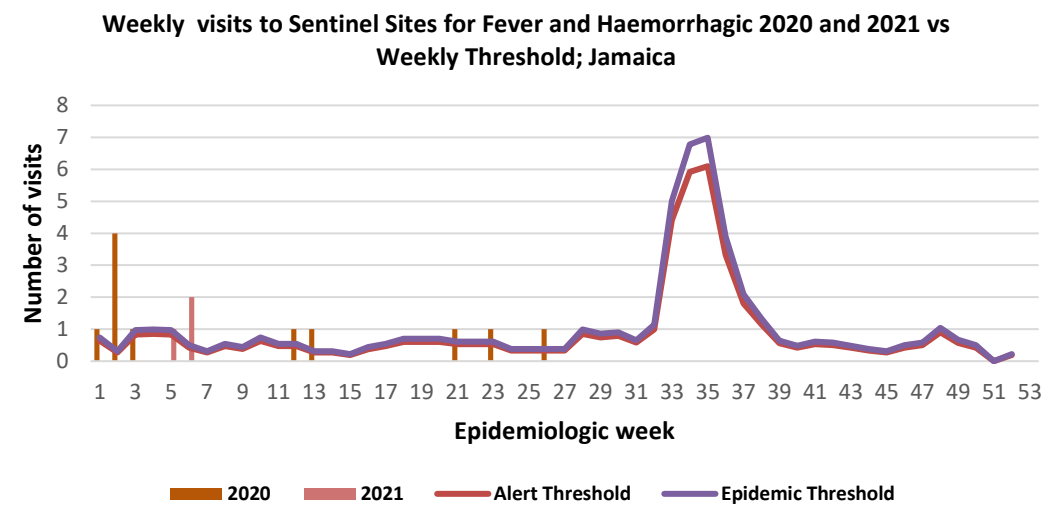
FEVER AND NEUROLOGICAL

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

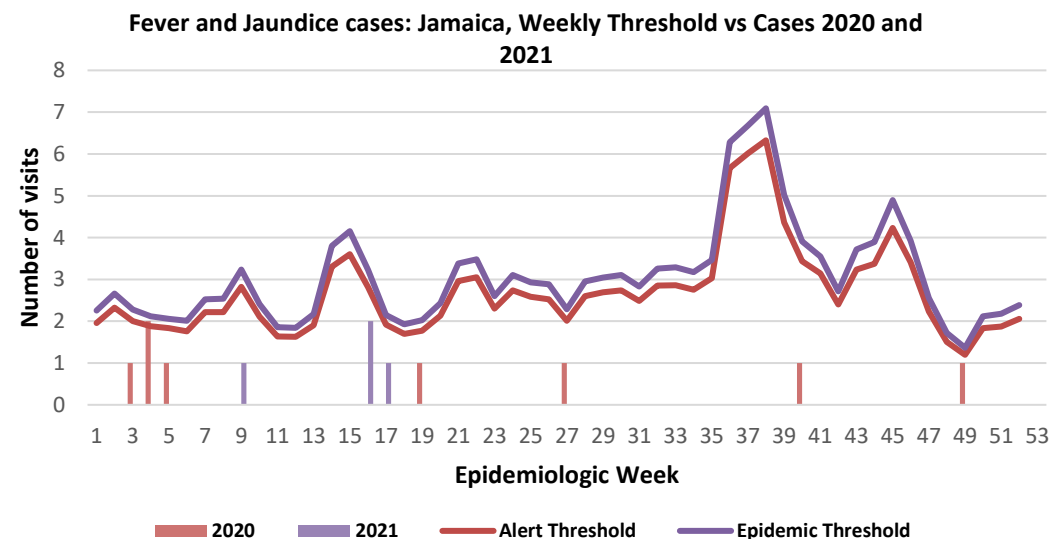
Temperature of $>38^{\circ}\text{C}$ / 100.4°F (or recent history of fever) in a previously healthy person presenting with at least one haemorrhagic (bleeding) manifestation with or without jaundice.



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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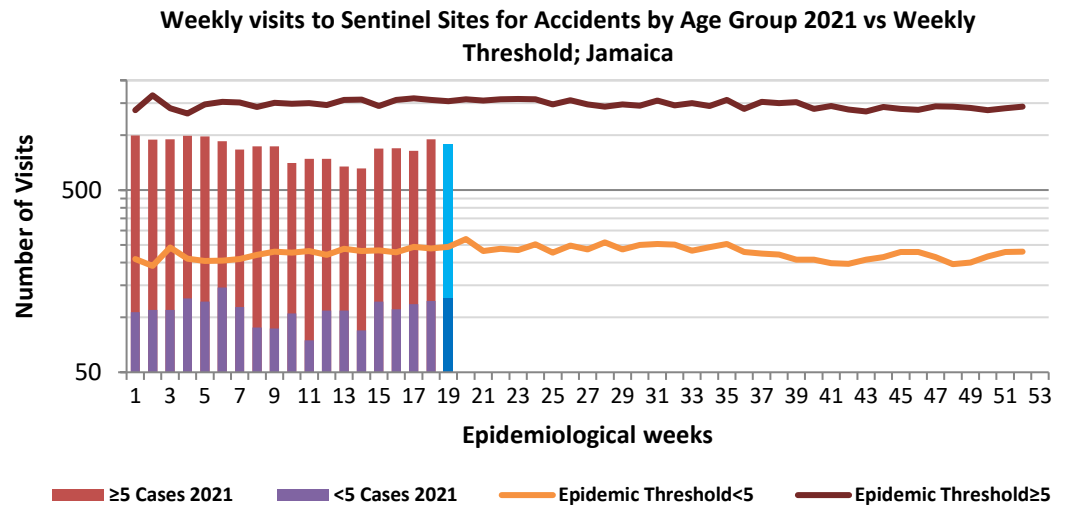
SENTINEL REPORT- 78 sites. Automatic reporting

ACCIDENTS

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

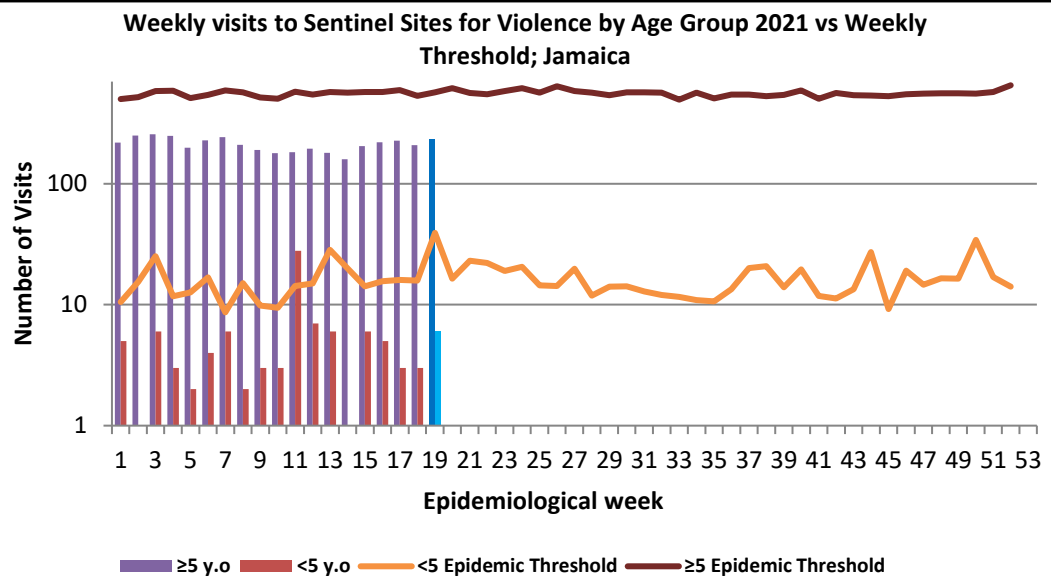
KEY

VARIATIONS OF BLUE SHOW CURRENT WEEK



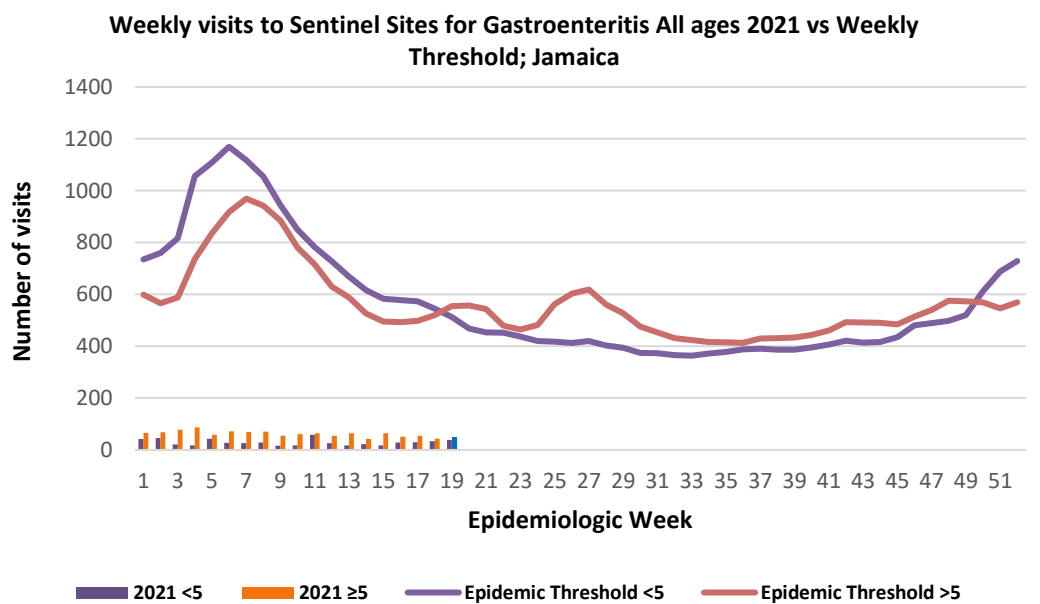
VIOLENCE

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		Confirmed YTD ^α		Comments	
CLASS 1 EVENTS		CURRENT YEAR 2021	PREVIOUS YEAR 2020		
NATIONAL /INTERNATIONAL INTEREST	Accidental Poisoning	0 ^β	48	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;	
	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	^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.	
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	10	16		
	Ophthalmia Neonatorum	0	38		
	Pertussis-like syndrome	0	0		
	Rheumatic Fever	0	0		
	Tetanus	0	0		
Tuberculosis	0	14			
Yellow Fever	0	0			
	Chikungunya ^ε	0	0		
	Zika Virus ^θ	0	0	NA- Not Available	



5 NOTIFICATIONS- All clinical sites



INVESTIGATION REPORTS- Detailed Follow up for all Class One Events



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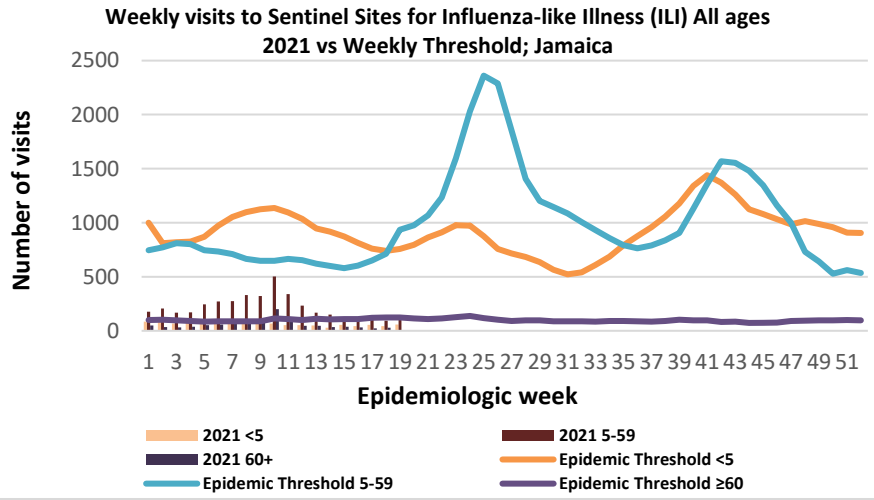
SENTINEL REPORT- 78 sites. Automatic reporting

NATIONAL SURVEILLANCE UNIT INFLUENZA REPORT

EW 19

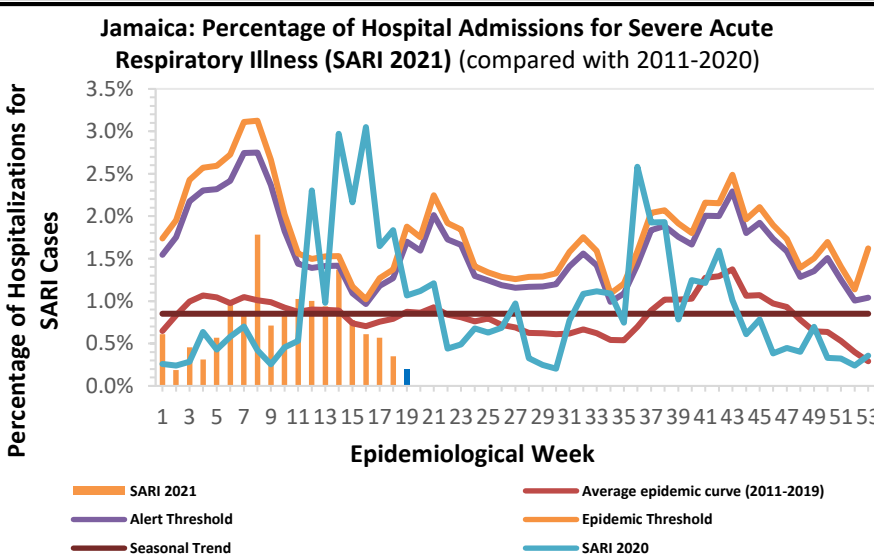
May 09, 2021 – May 15, 2021 Epidemiological Week 19

	EW 19	YTD
SARI cases	03	210
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



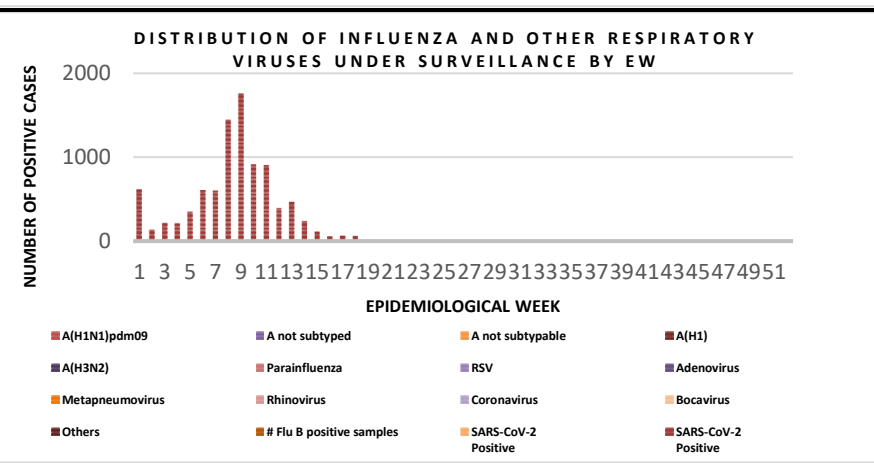
Epi Week Summary

During EW 19, 03 (three) SARI admissions were reported.



Caribbean Update EW 19

Caribbean: Influenza activity remained low. In Haiti, SARS-CoV-2 activity remained at moderate levels and increasing. In Saint Lucia, ILI activity remained above alert threshold among the ≥ 5 years of age and SARS-CoV-2 activity continues to increase..



6 NOTIFICATIONS-
All clinical sites



INVESTIGATION REPORTS- Detailed Follow up for all Class One Events



HOSPITAL ACTIVE SURVEILLANCE- 30 sites. Actively pursued

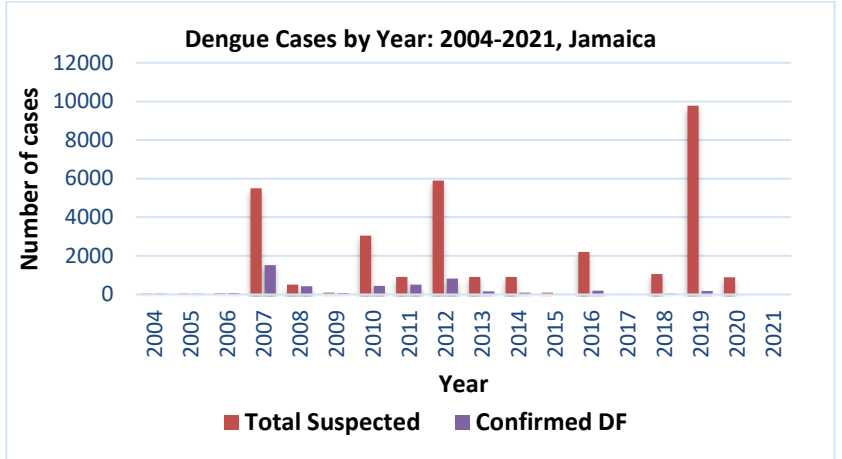


SENTINEL REPORT- 78 sites. Automatic reporting

Dengue Bulletin

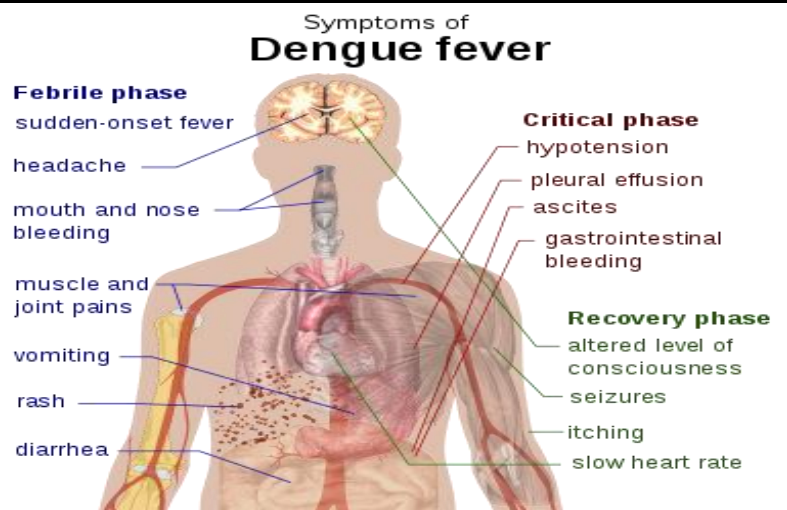
May 09, 2020 – May 15, 2021 Epidemiological Week 19

Epidemiological Week 19



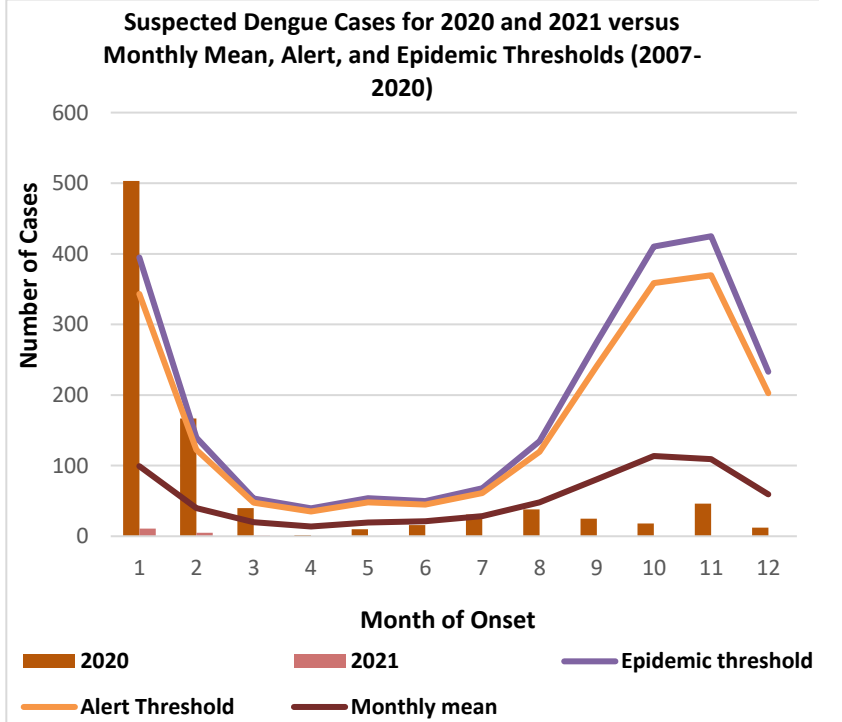
Reported suspected and confirmed dengue with symptom onset in week 19 of 2021

	2021*	
	EW 19	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.



7 NOTIFICATIONS-
All clinical sites

INVESTIGATION REPORTS- Detailed Follow up for all Class One Events

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SENTINEL REPORT- 78 sites. Automatic reporting

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.

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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.



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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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REPORT- 78 sites.
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