WEEKLY EPIDEMIOLOGY BULLETIN

NATIONAL EPIDEMIOLOGY UNIT, MINISTRY OF HEALTH & WELLNESS, JAMAICA

The Plague

Plague is an infectious disease caused by the bacteria *Yersinia pestis*, usually found in small mammals and their fleas. The disease is transmitted between animals via their fleas and, as it is a zoonotic bacteria, it can also transmit from animals to humans.

Humans can be contaminated by the bite of infected fleas, through direct contact with infected materials, or by inhalation. Plague can be a very severe disease in people, particularly in its septicaemic and pneumonic forms, with a case-fatality ratio of 30% - 100% if left untreated.

Although plague has been responsible for widespread pandemics throughout history, including the so-called Black Death that caused over 50 million deaths in Europe during the fourteenth century, today it can be easily treated with antibiotics and the use of standard preventative measures.

Plague is found on all continents except Oceania but most human cases since the 1990s have occurred in Africa. Democratic Republic of Congo, Madagascar and Peru are the three most endemic countries.

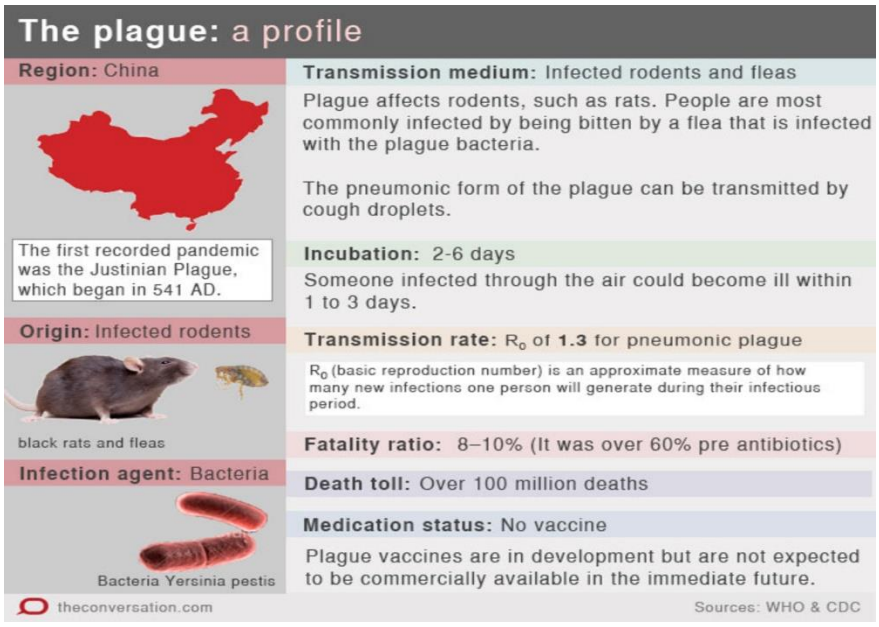
People infected with plague usually develop influenza-like symptoms after an incubation period of 3–7 days. Symptoms include fever, chills, aches, weakness, vomiting and nausea.

There are 3 main forms of plague.

Bubonic plague is the most common and is caused by the bite of an infected flea. The plague bacillus, *Y. pestis*, enters at the bite and travels to the nearest lymph node to replicate. The lymph node becomes inflamed, tense and painful, and is called a bubo. With advanced infections, the inflamed lymph nodes can turn into suppurating open sores. Bubonic plague cannot be transmitted from human to human.

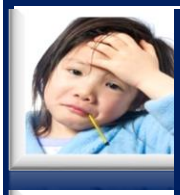
Septicaemic plague occurs when infection spreads through the bloodstream. It may result from flea bites or from direct contact with infective materials through cracks in the skin. Advanced stages of the bubonic form of plague will also lead to direct spread of *Y. pestis* in the blood.

Pneumonic plague – or lung-based plague – is the most virulent and least common form of plague. Typically, it is caused by spread to the lungs from advanced bubonic plague. However, a person with secondary pneumonic plague may form aerosolized infective droplets and transmit plague to other humans. This is usually fatal.



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

EPI WEEK 26


SYNDROMES

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GASTROENTERITIS

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RESEARCH PAPER

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Sentinel Surveillance in Jamaica

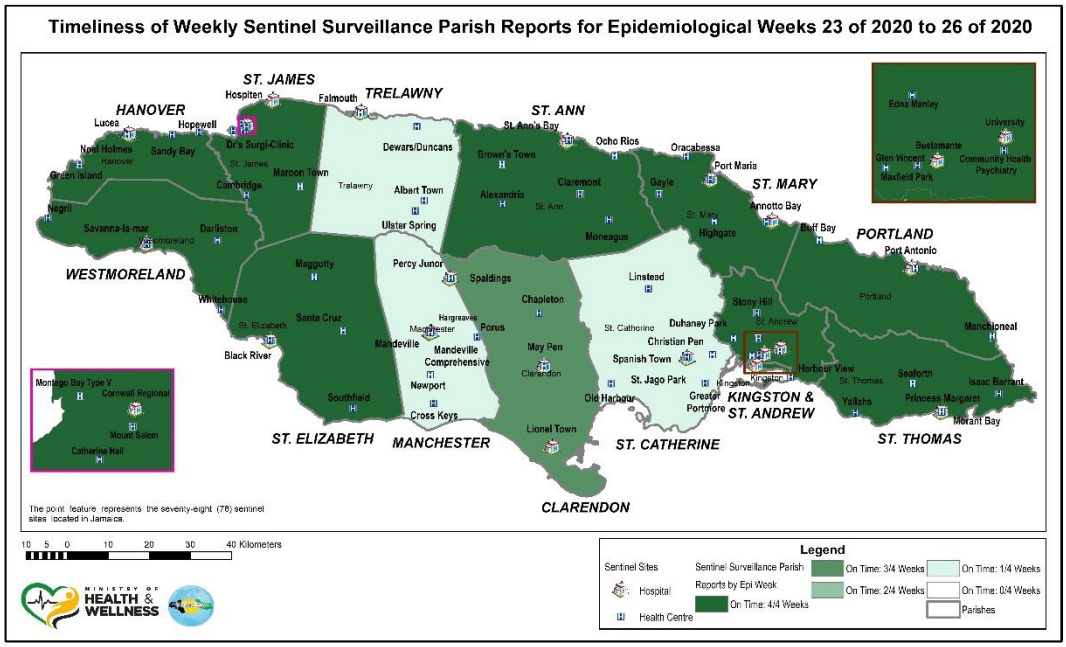
A syndromic surveillance system is good for early detection of and response to public health events.

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 – 23 to 26 of 2020

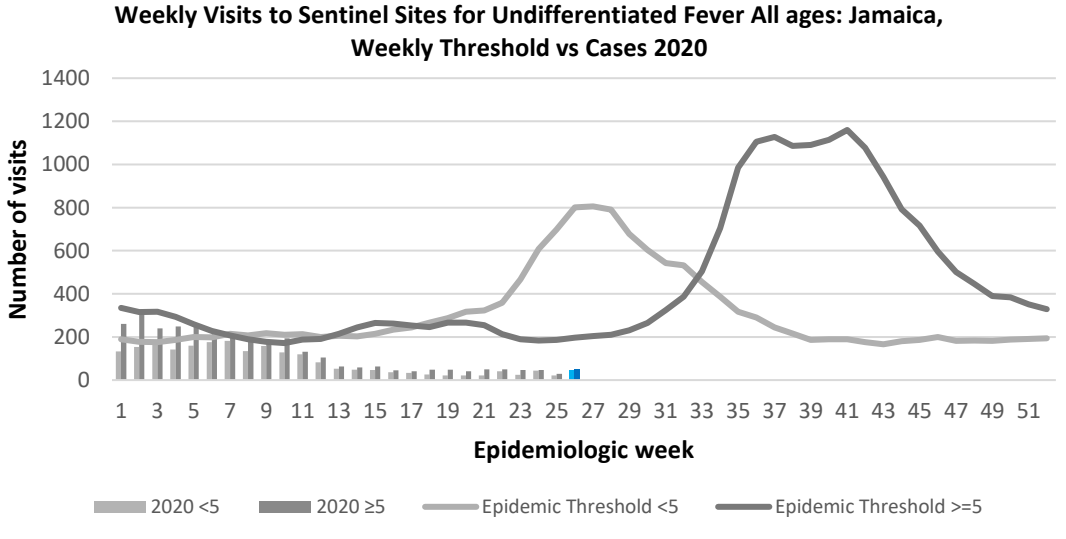
Parish health departments submit reports weekly by 3 p.m. on Tuesdays. Reports submitted after 3 p.m. are considered late.



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



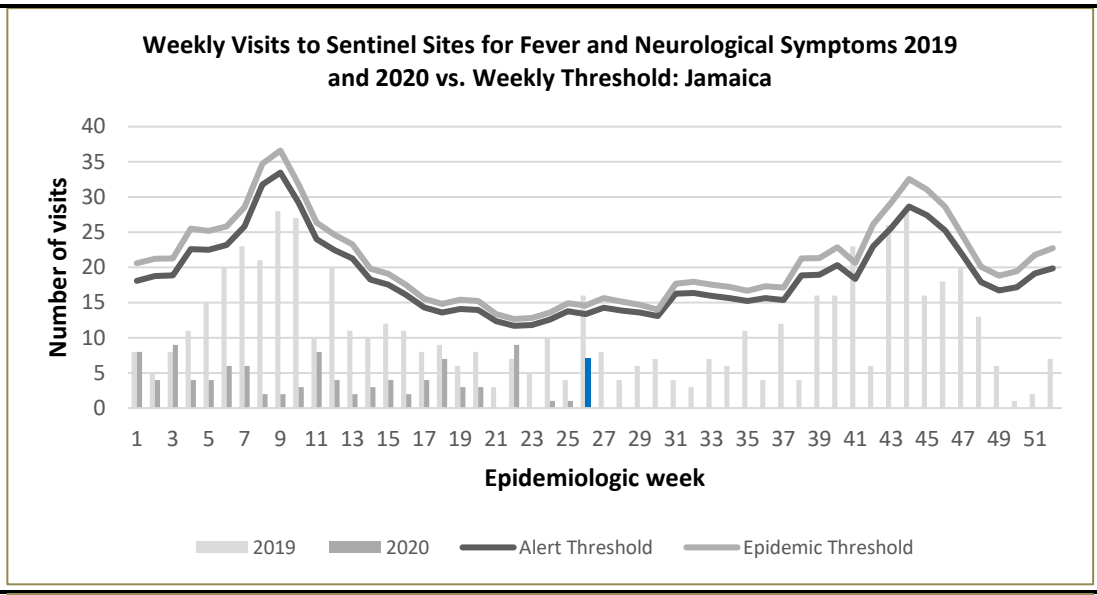
2 NOTIFICATIONS- All clinical sites

INVESTIGATION REPORTS- Detailed Follow up for all Class One Events

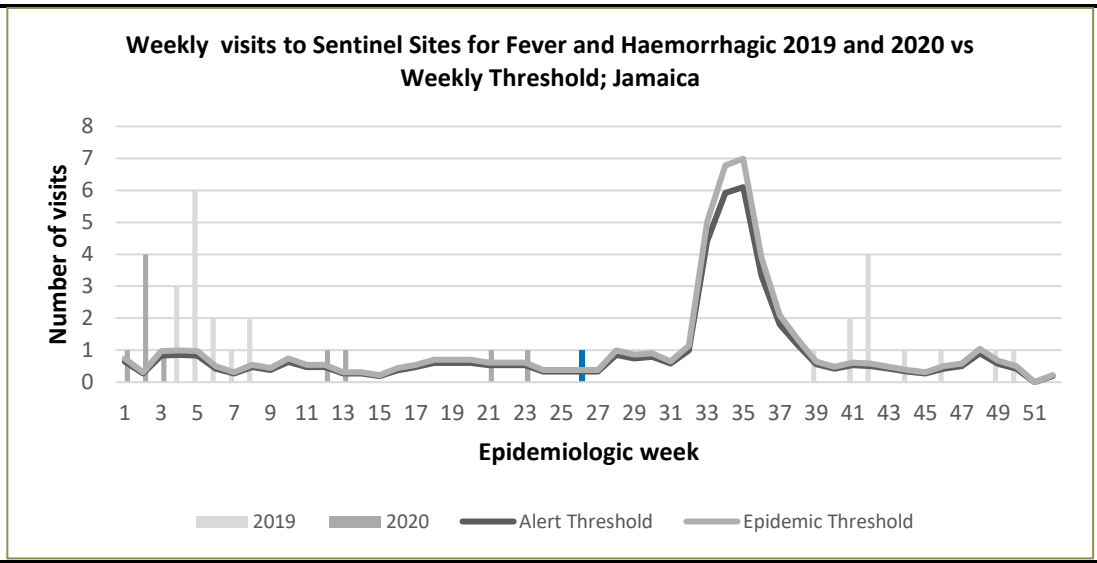
HOSPITAL ACTIVE SURVEILLANCE- 30 sites. Actively pursued

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).

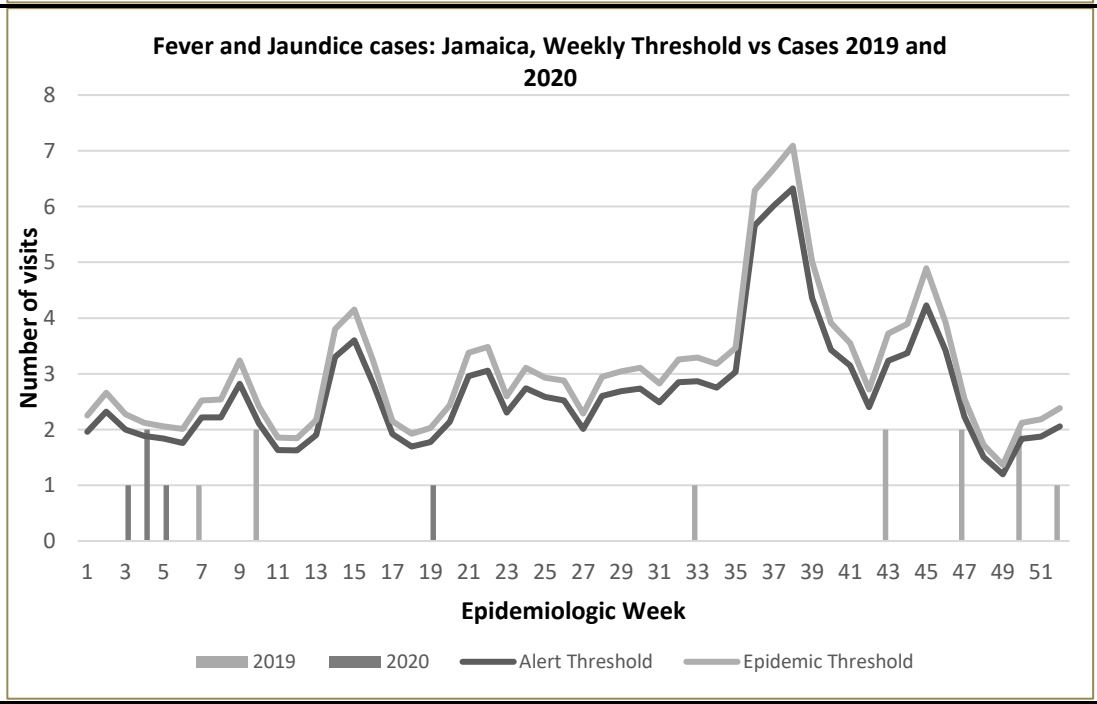


FEVER AND HAEMORRHAGIC
Temperature of >38^0C /100.4^0F (or recent history of fever) in a previously healthy person presenting with at least one haemorrhagic (bleeding) manifestation with or without jaundice.



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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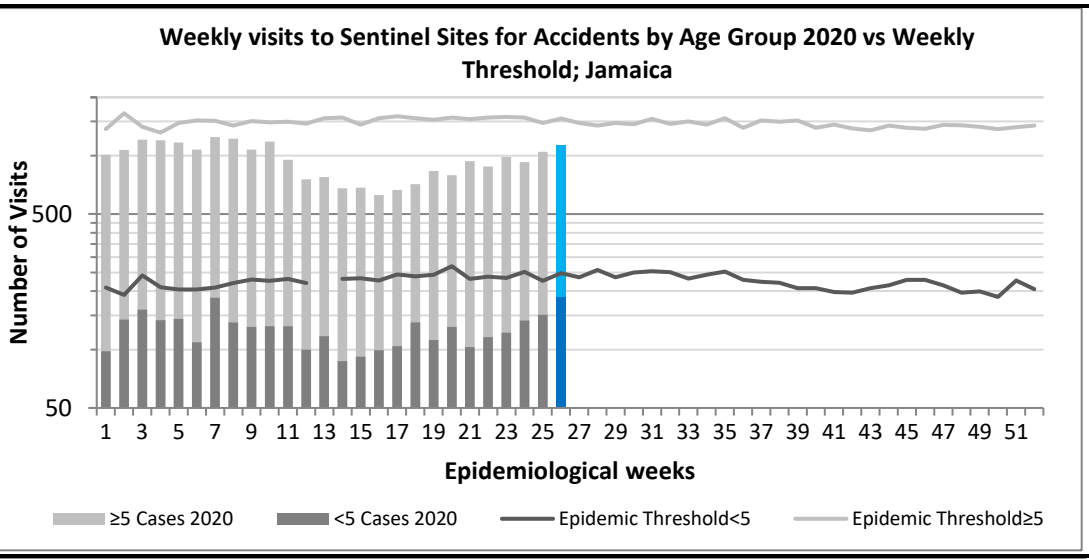
ACCIDENTS

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

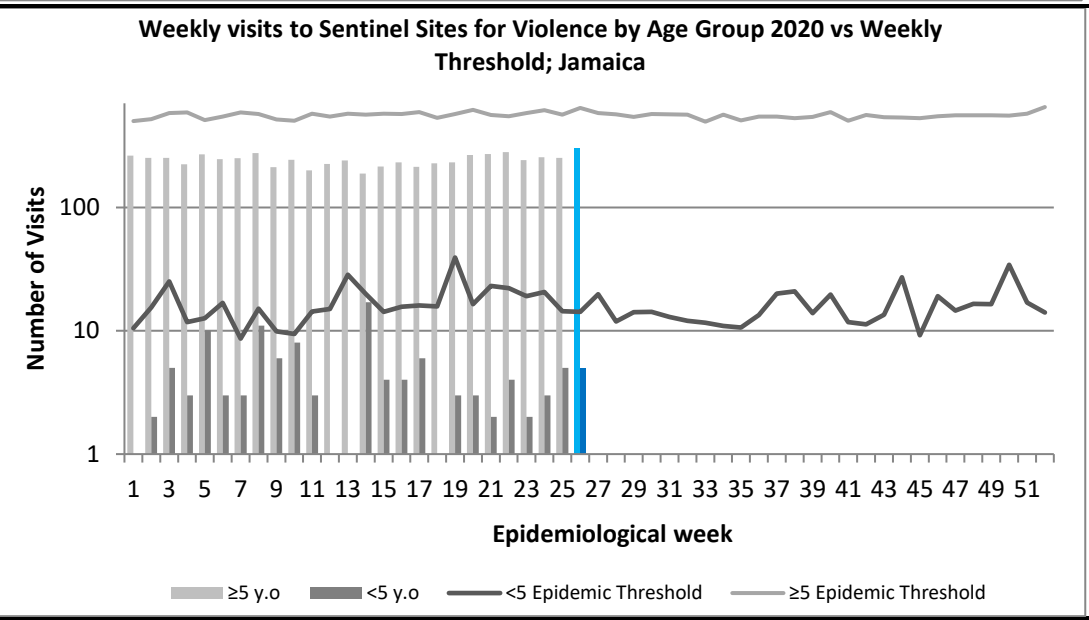
KEY

VARIATIONS OF BLUE SHOW CURRENT WEEK



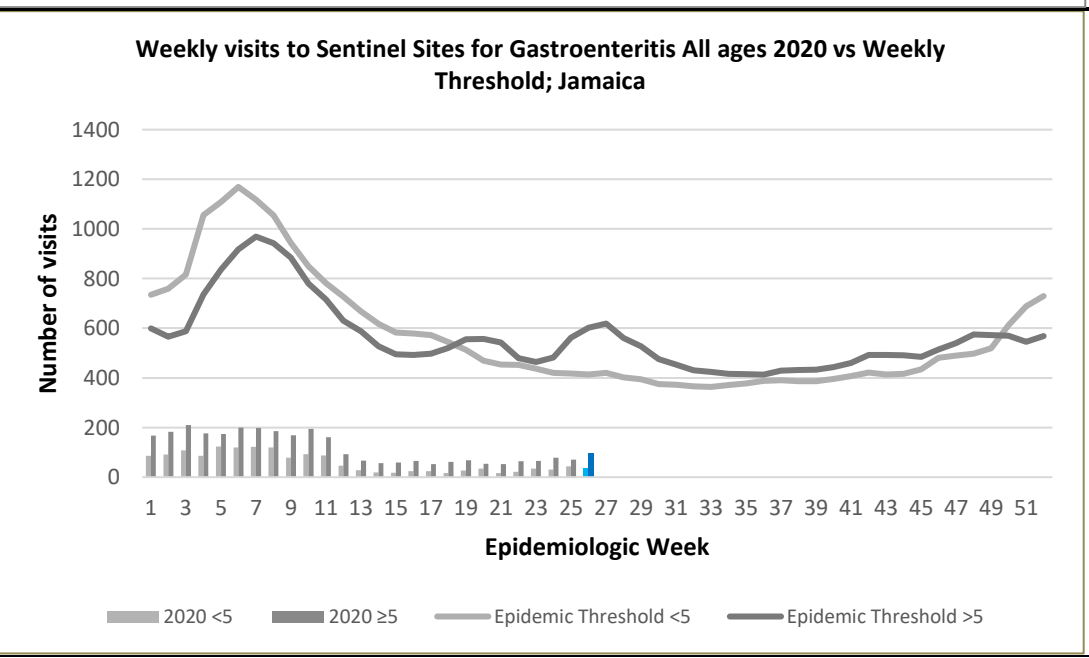
VIOLENCE

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.



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- CLASS ONE NOTIFIABLE EVENTS

	CLASS 1 EVENTS		Confirmed YTD CURRENT YEAR 2020	Confirmed YTD PREVIOUS YEAR 2019
NATIONAL /INTERNATIONAL INTEREST	Accidental Poisoning		5	21
	Cholera		0	0
	Dengue Hemorrhagic Fever*		NA	NA
	Hansen's Disease (Leprosy)		0	0
	Hepatitis B		0	11
	Hepatitis C		0	2
	HIV/AIDS		NA	NA
	Malaria (Imported)		0	0
	Meningitis (Clinically confirmed)		1	10
EXOTIC/ UNUSUAL	Plague		0	0
H IGH MORBIDIT/ MORTALIY	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**		21	29
	Ophthalmia Neonatorum		23	105
	Pertussis-like syndrome		0	0
	Rheumatic Fever		0	0
	Tetanus		0	0
	Tuberculosis		0	27
	Yellow Fever		0	0
	Chikungunya***		0	0
	Zika Virus****		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.

* Dengue Hemorrhagic Fever data include Dengue related deaths;

** Figures include all deaths associated with pregnancy reported for the period. * 2019 YTD figure was updated.

*** CHIKV IgM positive cases

**** Zika PCR positive cases

NA- Not Available

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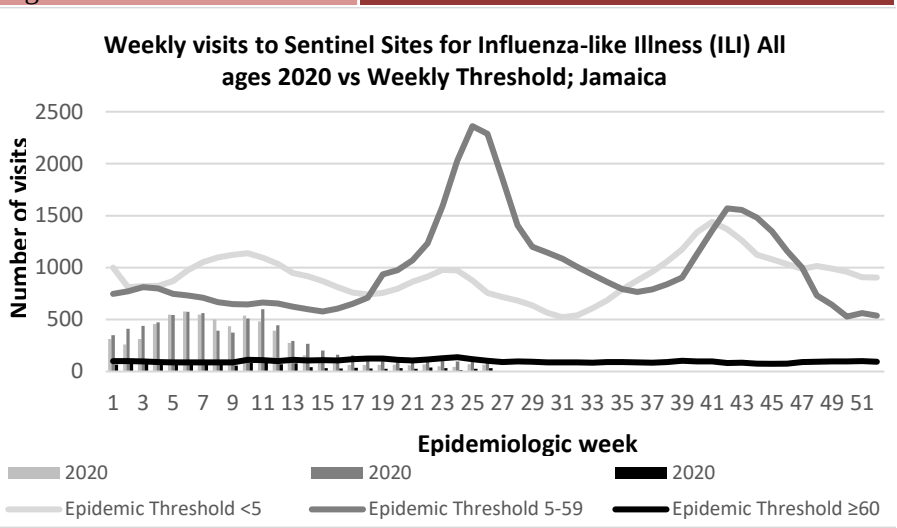
NATIONAL SURVEILLANCE UNIT INFLUENZA REPORT

EW 26

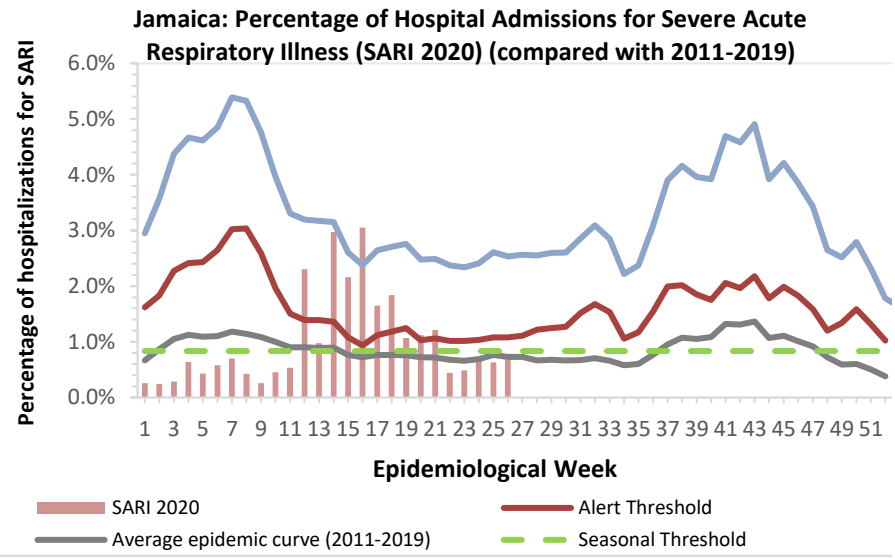
June 21, 2020-June 27, 2020 Epidemiological Week 26

	EW 26	*YTD*
SARI cases	*10*	*321*
Total Influenza positive Samples	*0*	*69*
Influenza A	*0*	*45*
H3N2	*0*	*4*
H1N1pdm09	*0*	*38*
Not subtyped	*0*	*3*
Influenza B	*0*	*24*
Parainfluenza	*0*	*0*



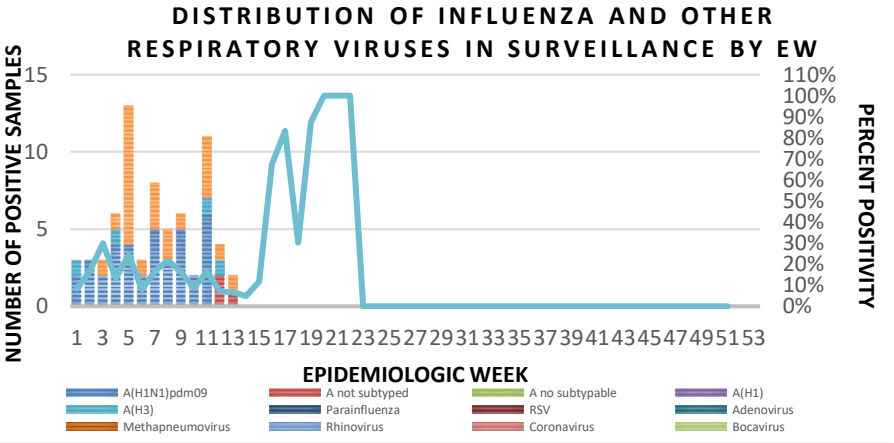
Epi Week Summary

During EW 26, 10 (ten) SARI admissions were reported.



Caribbean Update EW 26

Caribbean: Influenza and other respiratory virus activity remained low in the subregion. In Haiti and Suriname, detections of SARS-CoV-2 continue elevated and increasing..



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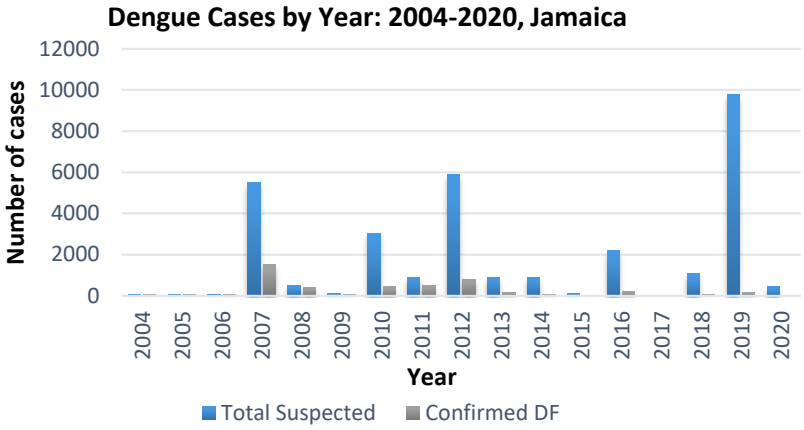
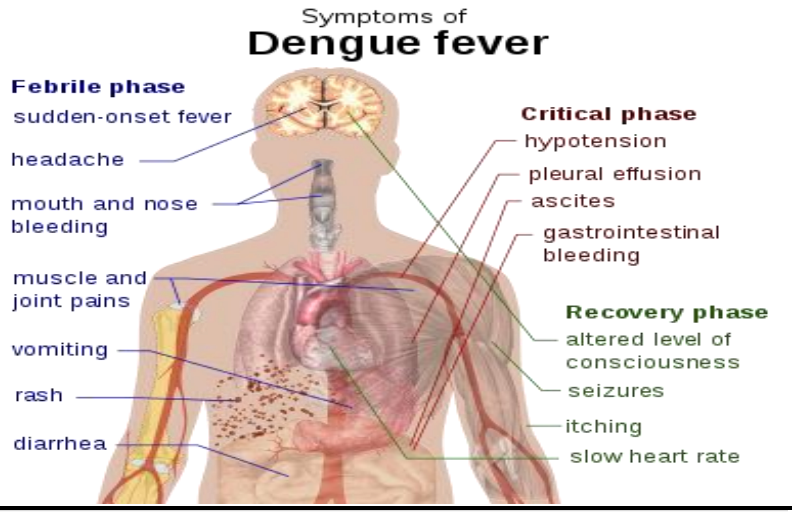
Dengue Bulletin

June 21, 2020-June 27, 2020 Epidemiological Week 26 | Epidemiological Week 26



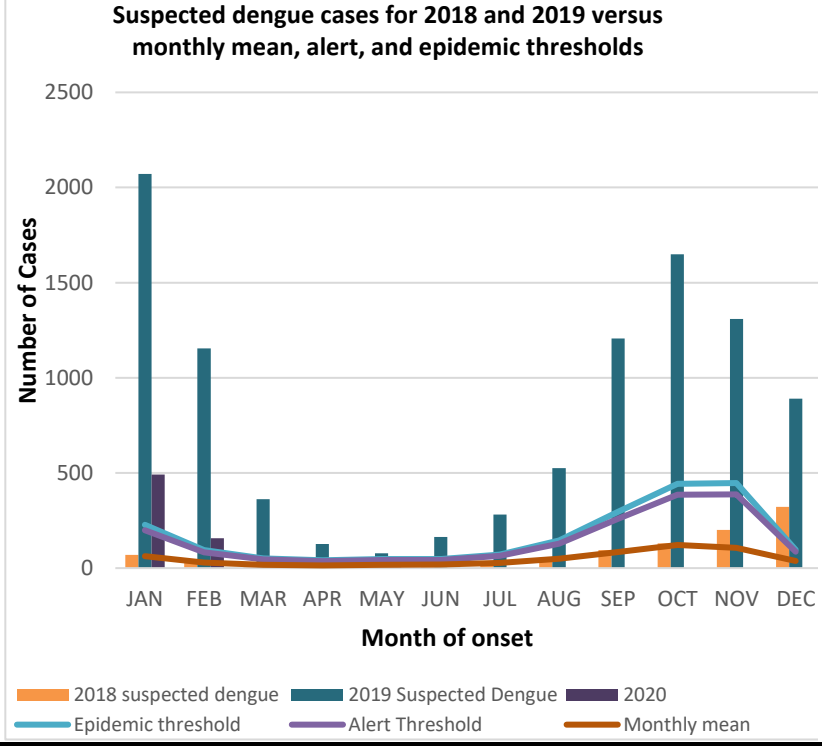
Reported suspected and confirmed dengue with symptom onset in week 26 of 2020

	2020	
	EW 26	YTD
Total Suspected Dengue Cases	0**	698**
Lab Confirmed Dengue cases	0**	1**
CONFIRMED Dengue Related Deaths	0**	1**



Points to note:

- ** figure as at July 3 , 2020
- Only PCR positive dengue cases are reported as confirmed.
- IgM positive cases are classified as presumed dengue.



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RESEARCH PAPER

ABSTRACT

Title: The Use of Breadfruit-based Media to Improve the Turnaround Time and Identification of Fungal Specimen.

A Bruce-Mowatt1, S Mair1, M Smikle1, G. Reynolds-Campbell1 1Department of Microbiology, University of the West Indies, Mona, Kingston 7, Jamaica

Objective: To determine the effectiveness of a breadfruit-based media (BFM) for the enhancement of sporulation, growth and identification of fungal pathogens; a feat that would improve the turnaround time currently observed at the mycology laboratory at the University of the West Indies (UWI).

Methods: The BFM was pre-prepared using sterile techniques and inoculated with a total of 25 previously identified fungal clinical isolates (eg. *Trichophyton* spp., *Fusarium* spp, *Chaetominum* spp, *Bipolaris* sp, *Curvalaria* sp, and *Aspergillus flavus)*. For the purposes of quality control ATTC strains of *E. coli* and *Candida albicans* were inoculated unto the media following standard microbiological procedures. All 27 species were also inoculated unto other standard media in use in the laboratory to allow for observation and comparison of the key features ie: enhancements to growth rate, sporulation characteristics, texture, colour etc. The isolates from resulting cultures were then identified using routine mycological tests. The observer was blinded as to the type of media in use.

Results: All 27 species of organisms grew within 18-48 hours and showed enhanced characteristic features.

Conclusion*:*Breadfruit, a sustainable Jamaican food staple, when prepared appropriately, can be used to supplement media for enhanced fungal isolation and identification. BFM proved to be a superior media that facilitated improved turnaround time, positioning itself as a possible industrial asset to the health sector. Further studies are needed to assess its capacity for improved isolation and identification of bacterial pathogens.

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