

# WEEKLY EPIDEMIOLOGY BULLETIN

## NATIONAL EPIDEMIOLOGY UNIT, MINISTRY OF HEALTH & WELLNESS, JAMAICA

### Zoonotic Diseases Series 3: Anthrax

**What is Anthrax?** Anthrax is a serious infectious disease caused by gram-positive, rod-shaped bacteria known as *Bacillus anthracis*. Anthrax can be found naturally in soil and commonly affects domestic and wild animals around the world. Although it is rare in the United States, people can get sick with anthrax if they come in contact with infected animals or contaminated animal products. Contact with anthrax can cause severe illness in both humans and animals. Anthrax is **not** contagious, which means you can't catch it like the cold or flu.

**How do animals get infected with anthrax?** Domestic and wild animals such as cattle, sheep, goats, antelope, and deer can become infected when they breathe in or ingest spores in contaminated soil, plants, or water. In areas where domestic animals have had anthrax in the past, routine vaccination can help prevent outbreaks.

**How do people get infected with anthrax?** People get infected with anthrax when spores get into the body. When anthrax spores get inside the body, they can be "activated." When they become active, the bacteria can multiply, spread out in the body, produce toxins (poisons), and cause severe illness. This can happen when people breathe in spores, eat food or drink water that is contaminated with spores, or get spores in a cut or scrape in the skin. It is very uncommon for people in the United States to get infected with anthrax. Certain activities can also increase a person's chances of getting infected.

**Where is anthrax found?** Anthrax is most common in agricultural regions of Central and South America, sub-Saharan Africa, central and southwestern Asia, southern and eastern Europe, and the Caribbean. Anthrax is rare in the United States, but sporadic outbreaks do occur in wild and domestic grazing animals such as cattle or deer. Anthrax is more common in developing countries and countries that do not have veterinary public health programs that routinely vaccinate animals against anthrax. In the United States, yearly vaccination of livestock is recommended in areas where animals have had anthrax in the past.

## EPI WEEK 44

### SYNDROMES



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### CLASS 1 DISEASES



PAGE 4

### INFLUENZA



PAGE 5

### DENGUE FEVER



PAGE 6

### GASTROENTERITIS



PAGE 7

2001 US anthrax attack letters

*Bacillus anthracis*

*Cutaneous Anthrax*

**Darrius Crowell and Sean Brinksneider**

# Anthrax

All you need to know

**What is anthrax?**  
Anthrax is a disease caused by the bacteria *Bacillus anthracis* found in soil, and both wild and domestic animals, and spread through the introduction of spores to the body.

**Prevention**  
Stay clear from Wild or domesticated animals, be careful during high terror alerts.

**Diagnosis and Treatment**  
Anthrax is diagnosed through Blood and Skin tests, Stool samples, Spinal taps, and X-ray/CT scans.  
Treatment requires: IMMEDIATE care with IV Antibiotics and various antitoxins.

**History**

- 1250 BCE: Originated in Ancient Greece
- 1881: Louis Pasteur creates first vaccine
- 1937: Anthrax vaccine for animals reduces cases in humans
- 1944: Penicillin is used in treatment
- 1950: First vaccine for humans is created
- 1979: Outbreak in Sverdlovsk, USSR
- 2001: Sep 2001 US anthrax attack

**The Anthrax Cycle**

**Death**

MP sends out warning signal  
MP's team of shock and gas slight resistance  
Anthrax releases toxin  
Toxin blocks the immune system  
Anthrax is extremely lethal at 20% survival. It kills by invading macrophages in the immune system and paralyzing biochemical pathways, resulting in rapid cell death.

**Symptoms:**

Cutaneous	Inhalation	Gastrointestinal	Injection
<ul style="list-style-type: none"> <li>Blisters and Bumps</li> <li>Swelling</li> <li>Painless black ulcer</li> </ul>	<ul style="list-style-type: none"> <li>Fever/Chills</li> <li>Chest Discomfort</li> <li>Shortness of breath</li> <li>Confusion or Dizziness</li> <li>Cough</li> <li>Nausea/Vomiting</li> <li>Breathing Swells</li> </ul>	<ul style="list-style-type: none"> <li>Fever/Chills</li> <li>Swelling of neck</li> <li>Sore throat</li> <li>Roady Vomiting</li> <li>Roady Diarrhea</li> <li>Red face/eyes</li> <li>Fainting</li> </ul>	<ul style="list-style-type: none"> <li>Fever/Chills</li> <li>Itching at site</li> <li>Swab site with black center</li> <li>Swelling</li> <li>Accumulated deep under skin (or site of injection)</li> </ul>

Sum, L. (2011, June 16). How The Immune System Fights Back Against Anthrax Infections. Retrieved March 11, 2016, from <http://www.sciencedirect.com/science/article/pii/S1537189X11000111>  
 Anthrax. (2015, September 01). Retrieved March 11, 2016, from <http://www.cdc.gov/anthrax/index.html>. Provided by the US Department of Health and Human Services  
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 Anthrax Letters and Web page [PowerPoint]. (2011, July 15). US FBI. Retrieved 2011. Anthrax attack, United States Government. (Originally photographed 2007)  
 Cutaneous Anthrax in Man (Photograph). (2011). CDC Public Health Images Library, The Center for Disease Control.



RESEARCH PAPER

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<https://www.cdc.gov/anthrax/basics/index.html>

## 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.



2 NOTIFICATIONS-  
All clinical  
sites



INVESTIGATION  
REPORTS- Detailed Follow  
up for all Class One Events



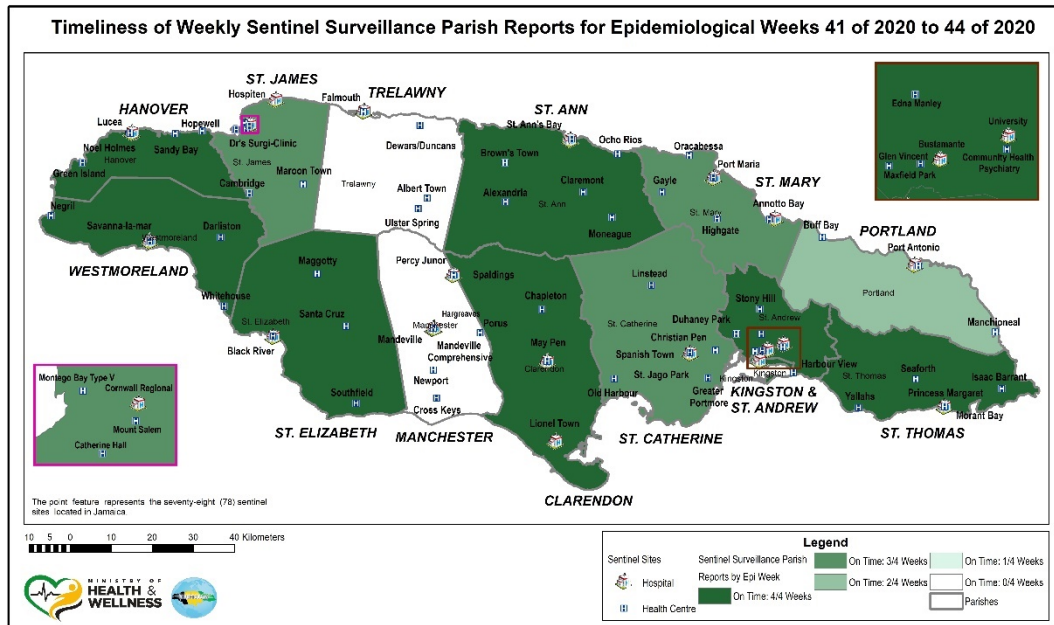
HOSPITAL  
ACTIVE  
SURVEILLANCE-  
30 sites. Actively  
pursued



SENTINEL  
REPORT- 78 sites.  
Automatic reporting

## Map representing the Timeliness of Weekly Sentinel Surveillance Parish Reports for the Four Most Recent Epidemiological Weeks - 41 to 44 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

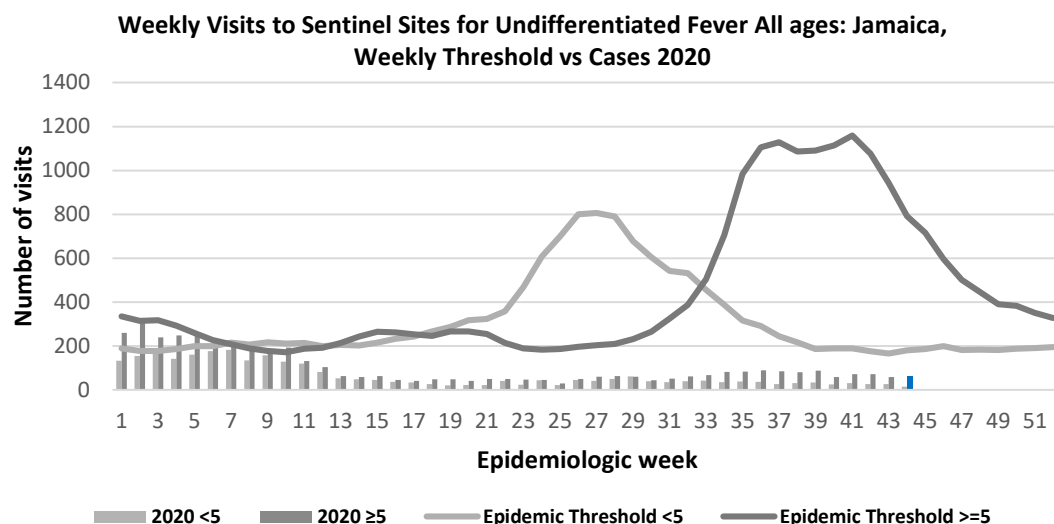
### FEVER

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



**KEY**

VARIATIONS OF BLUE SHOW CURRENT WEEK



**3 NOTIFICATIONS-**  
All clinical sites



**INVESTIGATION REPORTS-** Detailed Follow up for all Class One Events



**HOSPITAL ACTIVE SURVEILLANCE-** 30 sites. Actively pursued



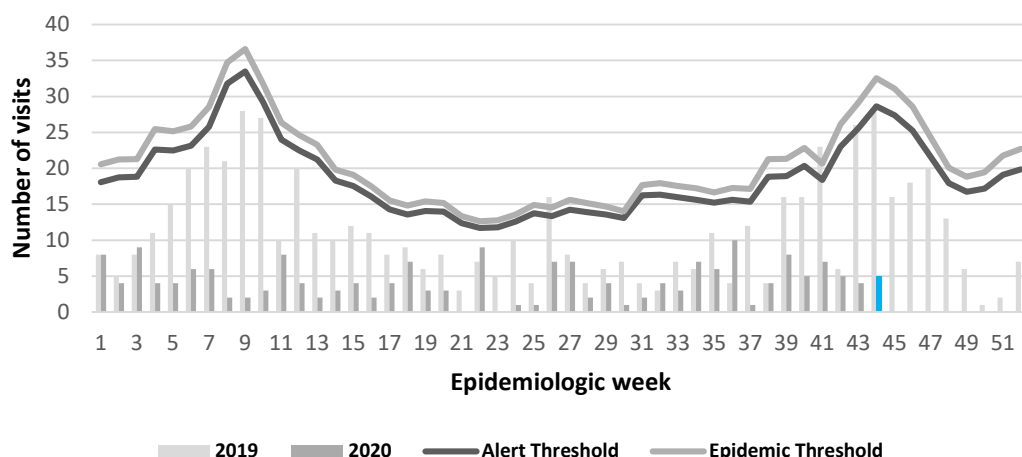
**SENTINEL REPORT-** 78 sites. Automatic reporting

**FEVER AND NEUROLOGICAL**

Temperature of  $>38^{\circ}\text{C}$  /  $100.4^{\circ}\text{F}$  (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).



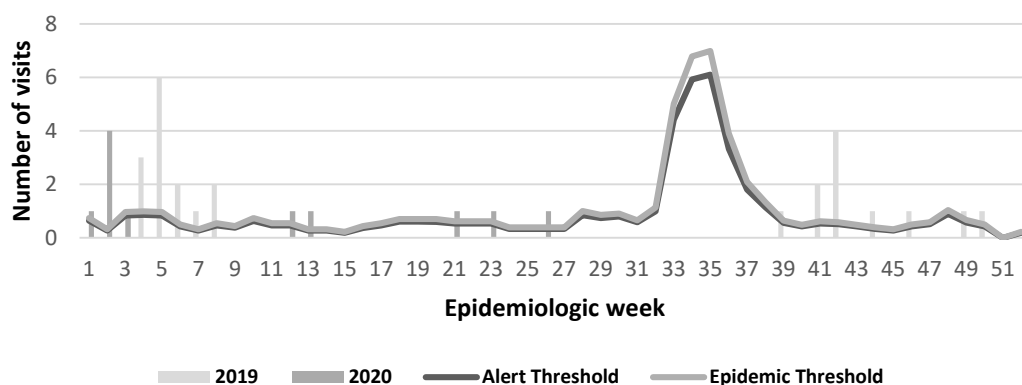
**Weekly Visits to Sentinel Sites for Fever and Neurological Symptoms 2019 and 2020 vs. Weekly Threshold: Jamaica**

**FEVER AND HAEMORRHAGIC**

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



**Weekly visits to Sentinel Sites for Fever and Haemorrhagic 2019 and 2020 vs Weekly Threshold; Jamaica**

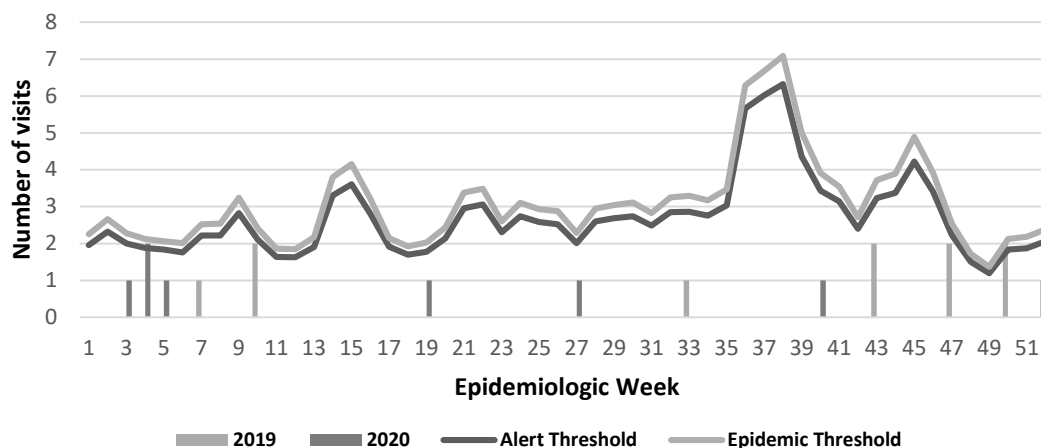
**FEVER AND JAUNDICE**

Temperature of  $>38^{\circ}\text{C}$  /  $100.4^{\circ}\text{F}$  (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.



**Fever and Jaundice cases: Jamaica, Weekly Threshold vs Cases 2019 and 2020**



**4 NOTIFICATIONS-**  
All clinical sites



**INVESTIGATION REPORTS-** Detailed Follow up for all Class One Events



**HOSPITAL ACTIVE SURVEILLANCE-** 30 sites. Actively pursued



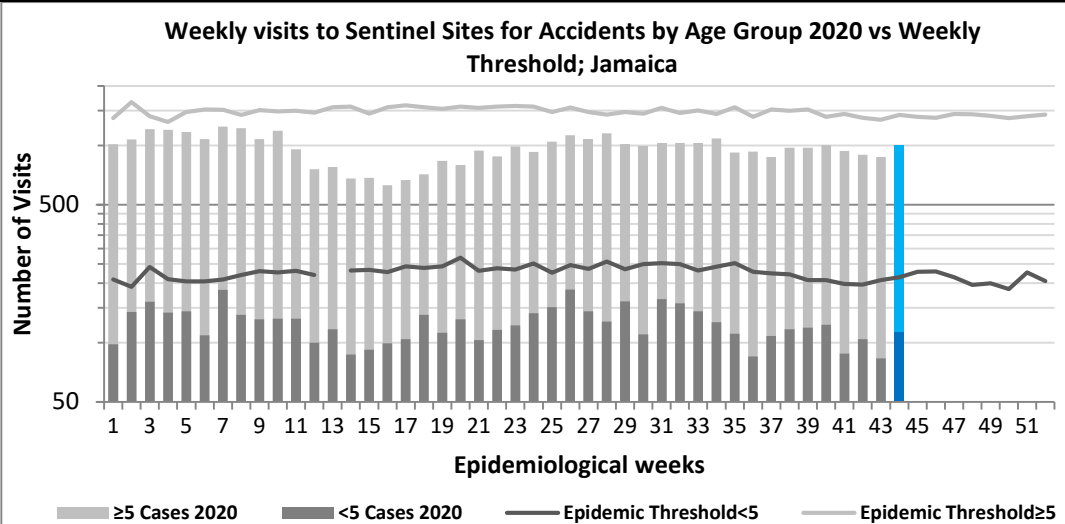
**SENTINEL REPORT-** 78 sites. Automatic reporting

**ACCIDENTS**

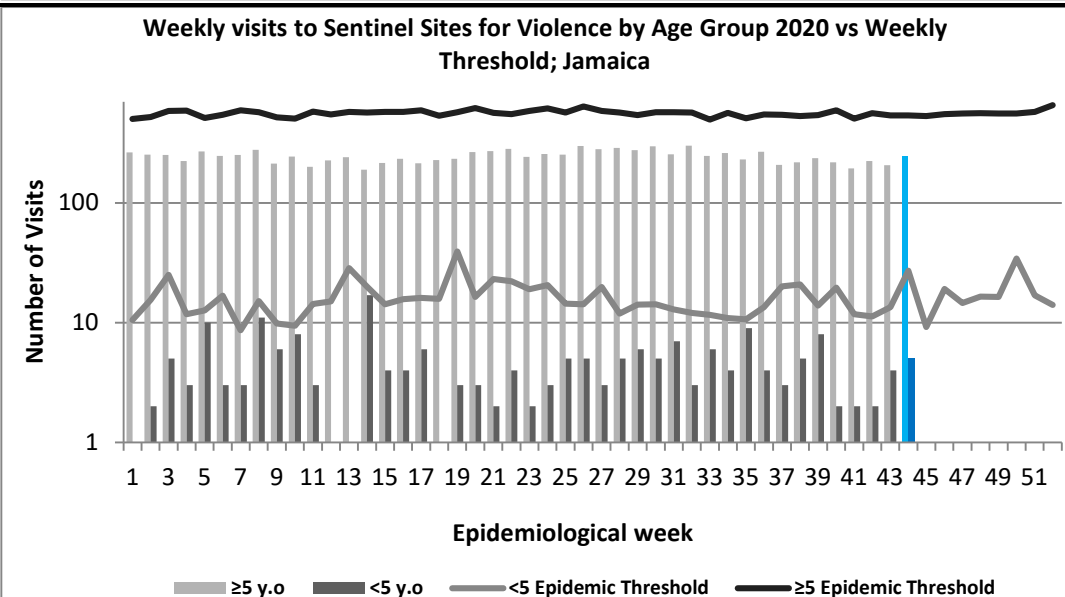
Any injury for which the cause is unintentional, e.g. motor vehicle, falls, burns, etc.

**KEY**

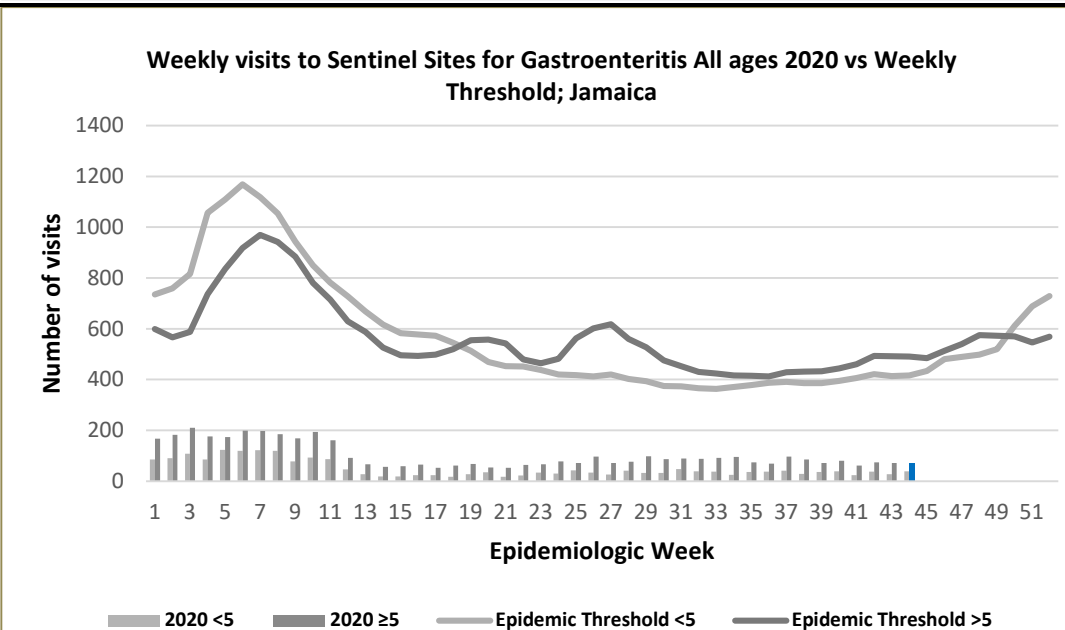
**VARIATIONS OF BLUE SHOW CURRENT WEEK**

**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.



**5 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		
	CLASS 1 EVENTS		CURRENT YEAR 2020	PREVIOUS YEAR 2019	
NATIONAL /INTERNATIONAL INTEREST	Accidental Poisoning		56	60	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.
	Cholera		0	0	
	Dengue Hemorrhagic Fever*		NA	NA	
	Hansen’s Disease (Leprosy)		0	0	
	Hepatitis B		3	23	
	Hepatitis C		0	2	
	HIV/AIDS		NA	NA	
	Malaria (Imported)		0	0	
	Meningitis (Clinically confirmed)		1	20	
EXOTIC/ UNUSUAL	Plague		0	0	* 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
HIGH MORBIDIT/ 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**		37	57	
	Ophthalmia Neonatorum		23	190	
	Pertussis-like syndrome		0	0	
	Rheumatic Fever		0	0	
	Tetanus		0	0	
	Tuberculosis		29	51	
	Yellow Fever		0	0	
	Chikungunya***		0	7	
	Zika Virus****		0	0	NA- Not Available



6 NOTIFICATIONS-  
All clinical  
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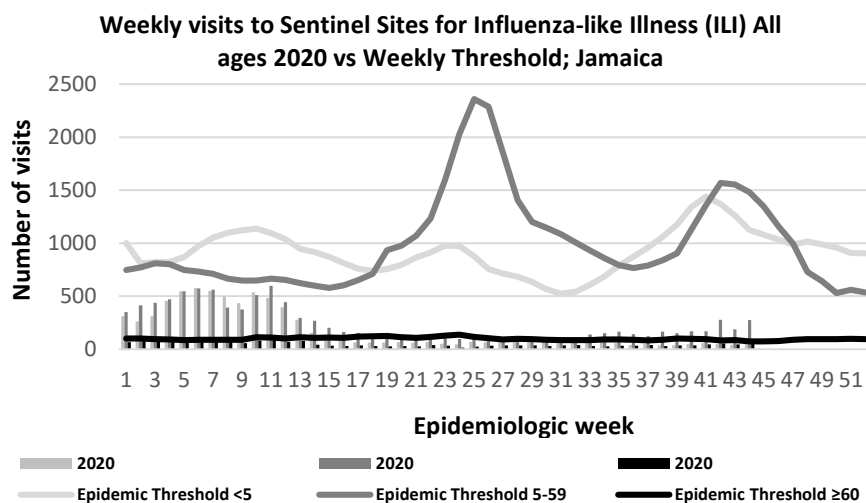


# NATIONAL SURVEILLANCE UNIT INFLUENZA REPORT

## EW 44

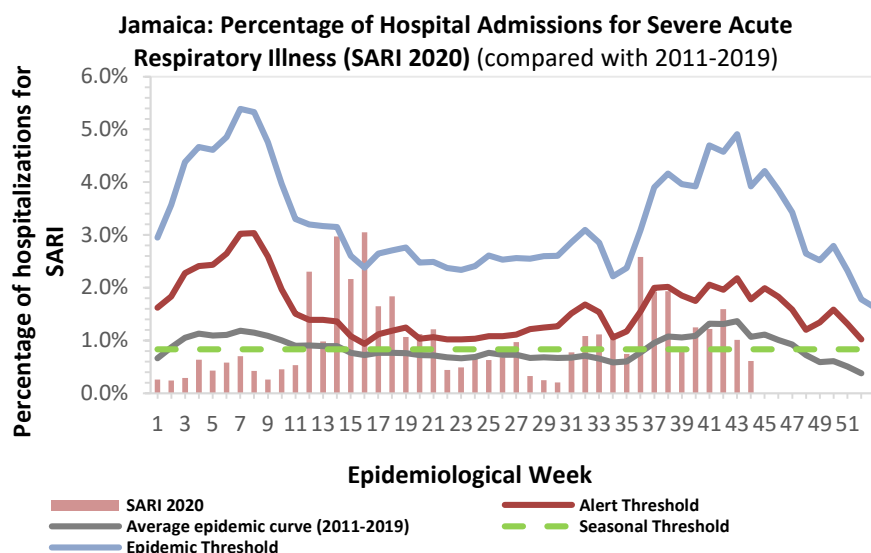
October 25, 2020 -October 31, 2020 Epidemiological Week 44

	EW 44	YTD
SARI cases	9	603
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



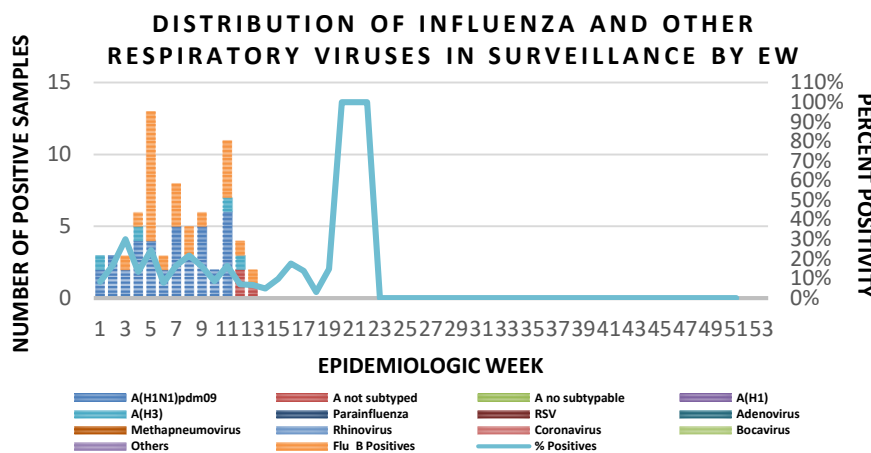
### Epi Week Summary

During EW 44, 9 (nine) SARI admissions were reported.



### Caribbean Update EW 44

Caribbean: Influenza and other respiratory virus activity remained low in the subregion. In Haiti, SARI activity increased above epidemic levels.



7 NOTIFICATIONS-  
All clinical  
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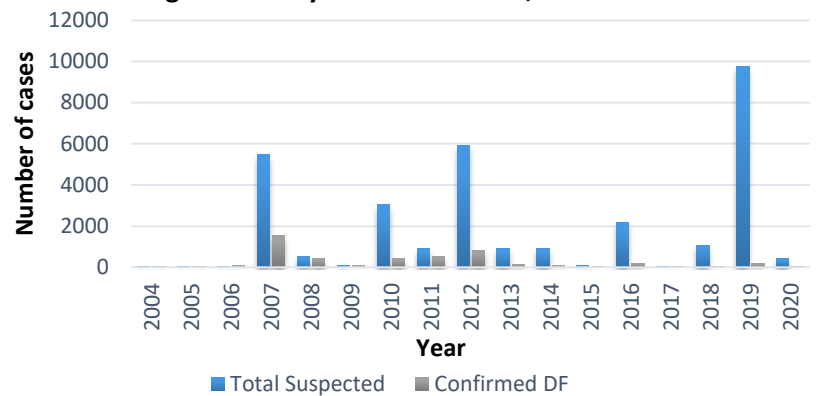


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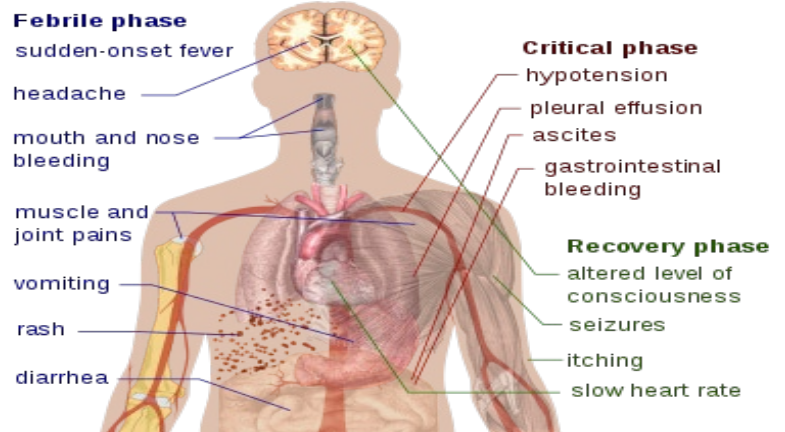
# Dengue Bulletin

October 25, 2020 – October 31, 2020 Epidemiological Week 44

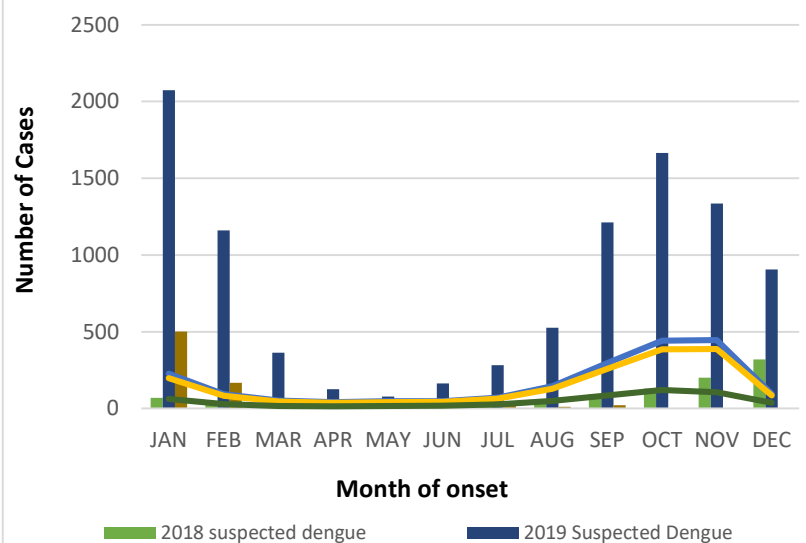
Epidemiological Week 44


**Dengue Cases by Year: 2004-2020, Jamaica**

**Reported suspected and confirmed dengue with symptom onset in week 44 of 2020**

	2020	
	EW 44	YTD
Total Suspected Dengue Cases	0**	785**
Lab Confirmed Dengue cases	0**	1**
CONFIRMED Dengue Related Deaths	0**	1**

**Symptoms of Dengue fever**

**Points to note:**

- \*\* figure as at November 6, 2020
- Only PCR positive dengue cases are reported as confirmed.
- IgM positive cases are classified as presumed dengue.

**Suspected dengue cases for 2018, 2019 and 2020 versus monthly mean, alert, and epidemic thresholds**


8 NOTIFICATIONS-  
All clinical  
sites



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# RESEARCH PAPER

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## ABSTRACT

*Training Teachers to Help Students to Cope with Post-Traumatic Stress*

**Authors:** Dr. Ganesh Shetty, Kingston & St. Andrew Health Department, Prof. Cynthia Onyefulu, University of Technology, Jamaica, Dr. Steve Weaver, University of the West Indies, Dr. Sandra Chambers, SE Regional Health Authority

**Introduction:** Exposure to trauma in children may result in mental health problems such as post-traumatic stress disorders (PTSD), anxiety disorder, depressive symptoms, dissociation, substance abuse, and delinquent and aggressive behaviors. The children who develop PTSD may later result in perpetrating violence on others. This study aimed to train a group of teachers in a primary school in Kingston, Jamaica with knowledge and skills to help students cope better with traumatic experiences. Research questions addressed were: What percentage of teachers know of the manifestations of and coping skills to manage PTSD prior to training? To what extent will there be a difference in the teachers' knowledge of symptoms and skills to cope with PTSD after training?



9 NOTIFICATIONS-  
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**Methods:** The mixed methods approach was used. All 20 (5 male & 15 female) teachers voluntarily participated in the study. The teachers were pre-tested to measure their knowledge of and ways of coping with PTSD in March 2019, and attended six training sessions, and were post-tested in June 2019.

**Results:** The results showed that the pre-test scores ( $M = 1.95$ ,  $SD = 2.19$ ) of 35% of the teachers knew some skills in managing PTSD before the training. The post-test scores ( $M = 4.00$ ,  $SD = 1.69$ ) of the 75% of the teachers learnt the skills after the training, while 50% retained their skills three months after the training. A feedback session was also conducted.

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1 NOTIFICATIONS-  
0 All clinical  
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