

WEEKLY EPIDEMIOLOGY BULLETIN

NATIONAL EPIDEMIOLOGY UNIT, MINISTRY OF HEALTH & WELLNESS, JAMAICA

Leptospirosis

Leptospirosis is a zoonotic disease with epidemic potential, especially after a heavy rainfall, caused by a bacterium called *Leptospira*. *Leptospira interrogans* is pathogenic to humans and animals, with more than 200 serologic variants or serovars. Humans usually acquire leptospirosis through direct contact with the urine of infected animals or a urine-contaminated environment. Human-to-human transmission occurs only very rarely.

Estimates indicate that there are more than 500,000 cases of leptospirosis each year worldwide. Leptospirosis is a disease of epidemic potential, especially after heavy rainfall or flooding. Cases have been reported in most countries of the Americas and outbreaks have been reported in Brazil, Nicaragua, Guyana and several other Latin American countries. The majority of reported cases have severe manifestations, for which mortality is greater than 10%. The number of human cases is not known precisely due to under- or misdiagnosis. Outbreaks can be associated with floods and hurricanes.

Leptospirosis can also be an occupational hazard for people who work outdoors or with animals, such as rice and sugar-cane field workers, farmers, sewer workers, veterinarians, dairy workers, and military personnel. It is also a recreational hazard to those who swim or wade in contaminated water.

Leptospirosis is a problem of human and veterinary public health. The numerous *Leptospira* strains can establish infections within a variety of animal hosts that includes rodents, livestock, and other domestic animals while humans serve as incidental hosts. Wild and domestic animals in the carrier state may shed leptospires intermittently for many years or even a lifetime.

Key facts

Clinical diagnosis

Typically, the disease presents in four broad clinical categories:

1. A mild, influenza-like illness
2. Weil's syndrome characterized by jaundice, renal failure, haemorrhage and myocarditis with arrhythmias
3. Meningitis/meningoencephalitis
4. Pulmonary haemorrhage with respiratory failure

Of the many symptoms the most common clinical features of leptospirosis include fever, headache, myalgia (particularly in the calf muscle), conjunctival suffusion, jaundice, general malaise in addition to other symptoms/signs.

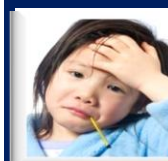
Incubation period: 5-14 days, with a range of 2-30 days.

Symptoms are easily confused with other common diseases in the tropics, such as dengue and other hemorrhagic fevers.

The diagnosis of leptospirosis should be considered in any patient presenting with an abrupt onset of fever, chills, conjunctival suffusion, headache, myalgia and jaundice.

History of occupational or recreational exposure to infected animals or to an environment potentially contaminated with animal urine.

EPI WEEK 20



SYNDROMES

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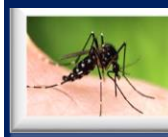
CLASS 1 DISEASES

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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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SENTINEL SYNDROMIC SURVEILLANCE

Sentinel Surveillance in Jamaica



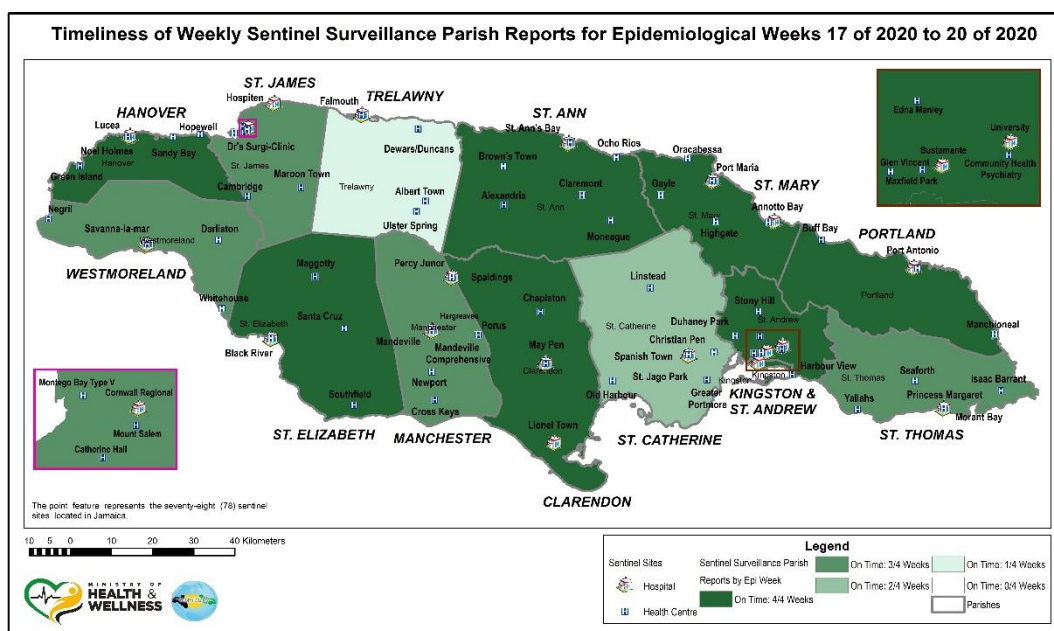
A syndromic surveillance system is good for early detection of and response to public health events.

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 - 17 to 19 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

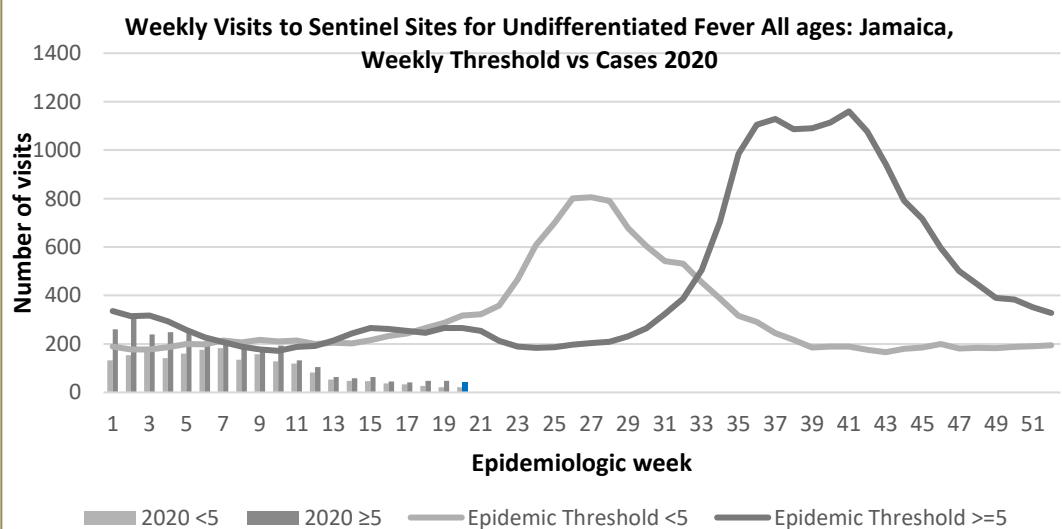
FEVER

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



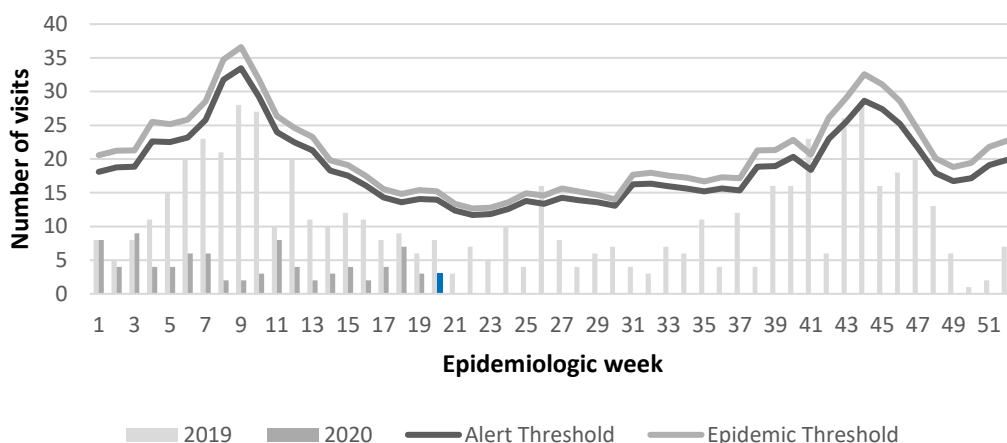
SENTINEL REPORT- 78 sites. Automatic reporting

FEVER AND NEUROLOGICAL

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



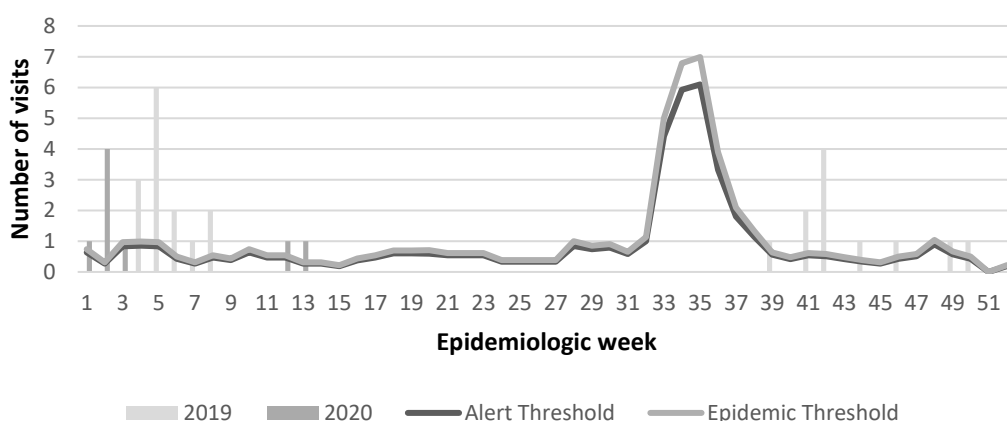
**Weekly Visits to Sentinel Sites for Fever and Neurological Symptoms
2019 and 2020 vs. Weekly Threshold: Jamaica**

**FEVER AND HAEMORRHAGIC**

Temperature of $>38^{\circ}\text{C}$ / 100.4°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

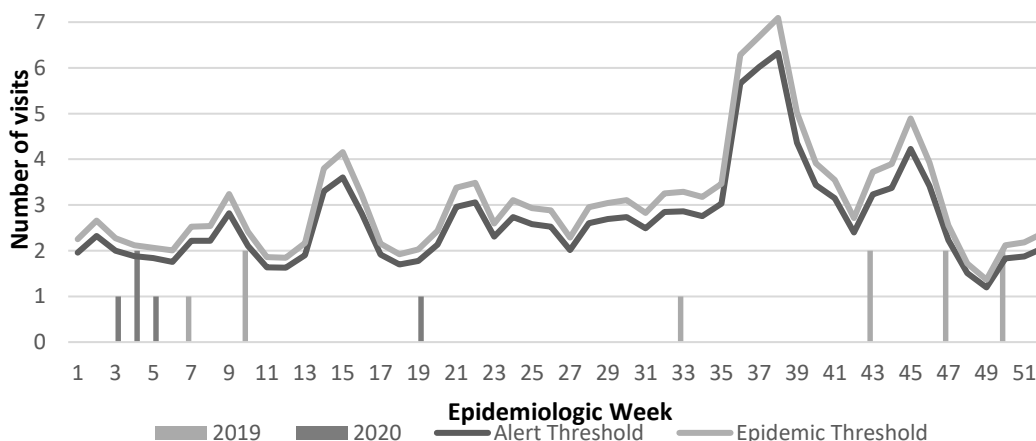
**FEVER AND JAUNDICE**

Temperature of $>38^{\circ}\text{C}$ / 100.4°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



3 NOTIFICATIONS-
All clinical sites



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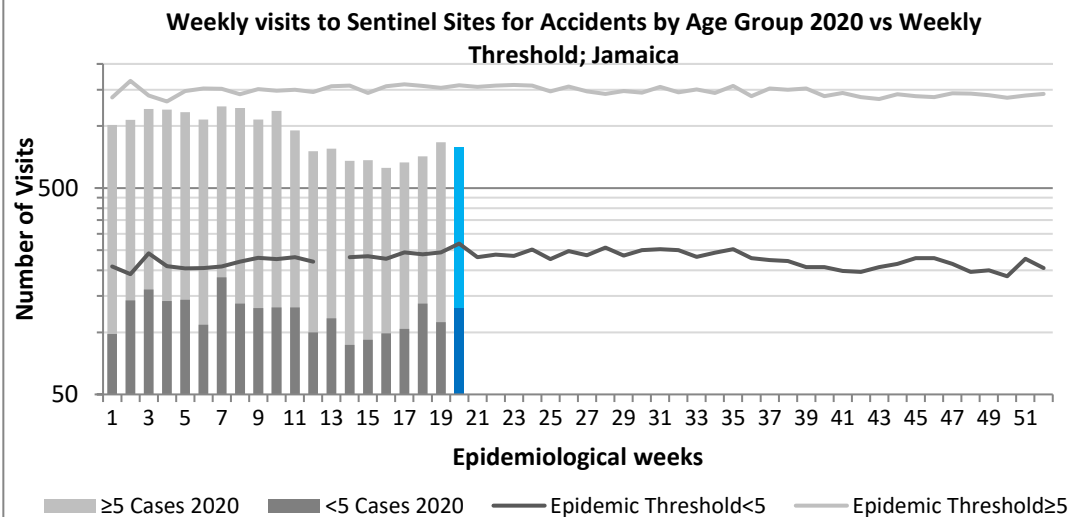
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ACCIDENTS

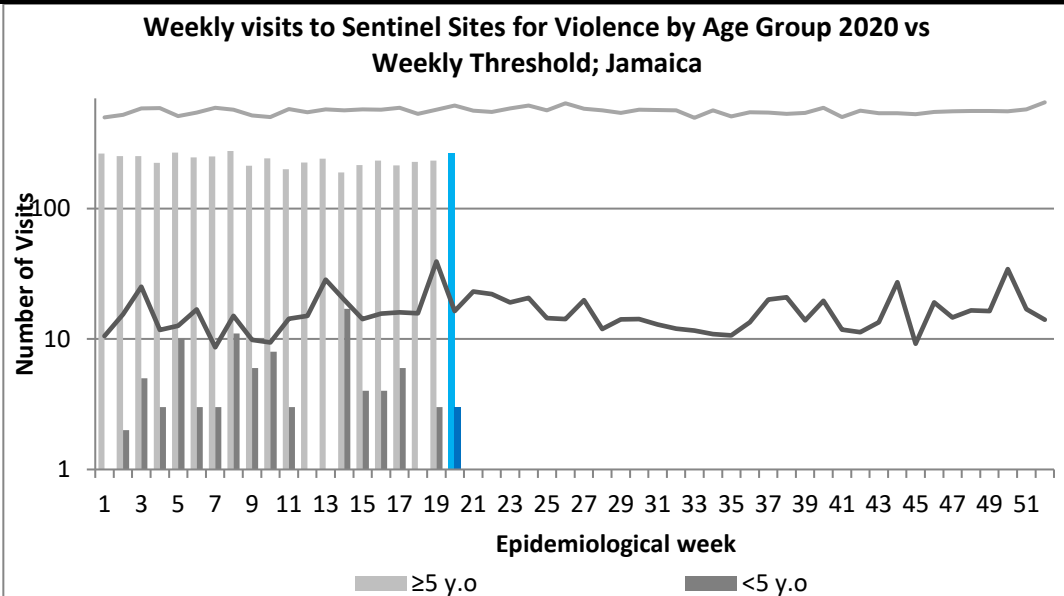
Any injury for which the cause is unintentional, e.g. motor vehicle, falls, burns, etc.

KEY

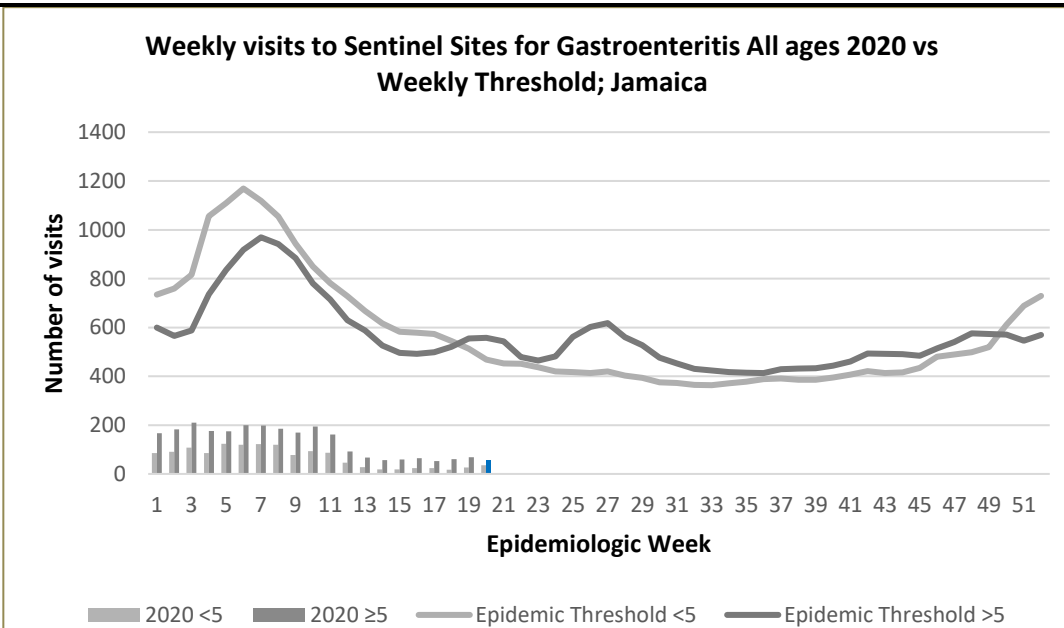
VARIATIONS OF BLUE SHOW CURRENT WEEK

**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.



4 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		5	6	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		0	8	
	Hepatitis C		0	2	
	HIV/AIDS		NA	NA	
	Malaria (Imported)		0	0	
	Meningitis (Clinically confirmed)		1	5	
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 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**		13	25	
	Ophthalmia Neonatorum		23	83	
	Pertussis-like syndrome		0	0	
	Rheumatic Fever		0	0	
	Tetanus		0	0	
	Tuberculosis		0	11	
	Yellow Fever		0	0	
	Chikungunya***		0	0	NA- Not Available
	Zika Virus****		0	0	



5 NOTIFICATIONS-
All clinical sites



INVESTIGATION
REPORTS- Detailed Follow
up for all Class One Events



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NATIONAL SURVEILLANCE UNIT INFLUENZA REPORT

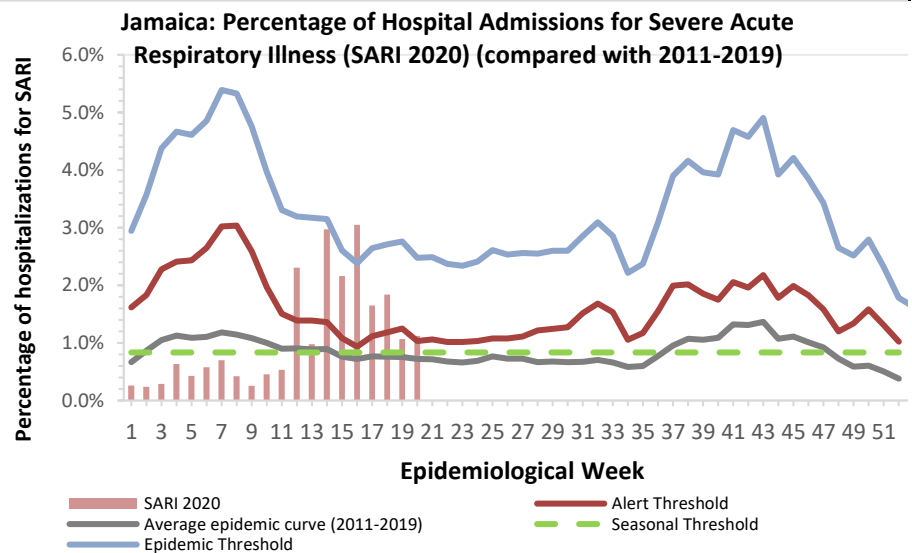
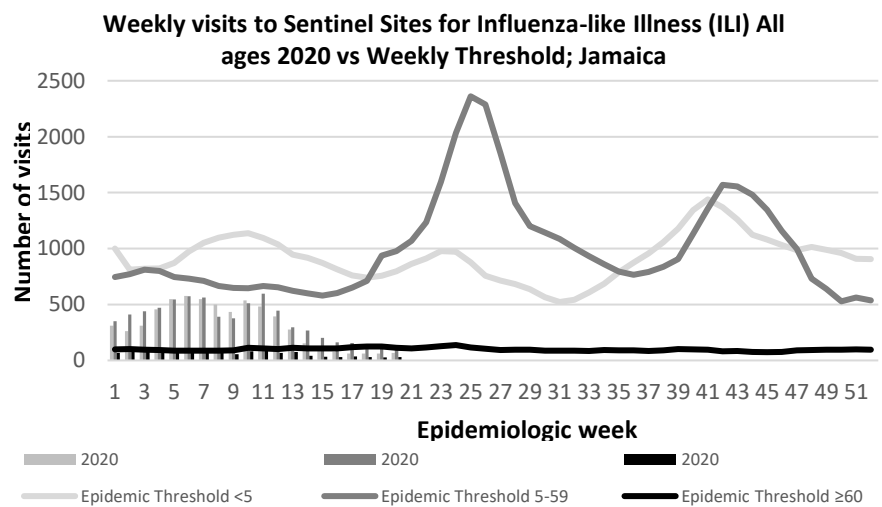
EW 20

May 10, 2020-May 16, 2020 Epidemiological Week 20

	EW 20	YTD
SARI cases	14	264
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

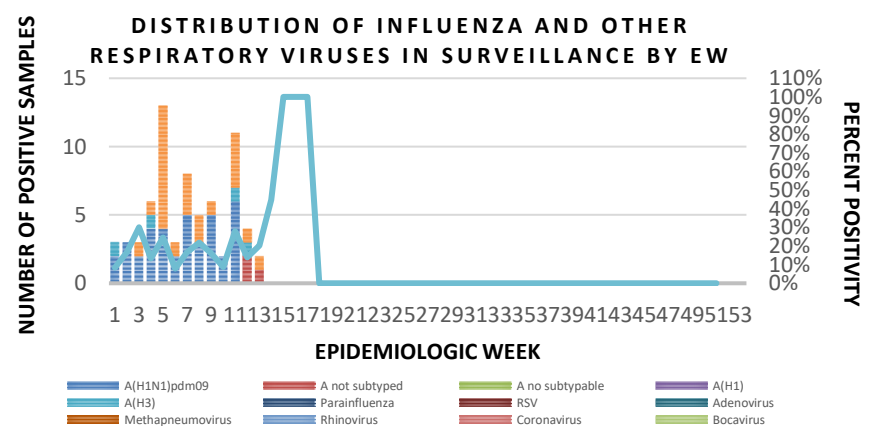
Epi Week Summary

During EW 20, 14 (fourteen) SARI admissions were reported.



Caribbean Update EW 20

Caribbean: Overall, influenza activity was elevated in the sub-region. In Cuba, influenza activity increased with influenza A and B viruses co-circulating. Influenza activity decreased in Belize with influenza A(H1N1)pdm09 and influenza B viruses co-circulating. All the French Territories are in the epidemic phase with a continued increase in influenza activity observed in Guadeloupe and Martinique. In Saint-Barthélemy influenza activity was stable. In the Dominican Republic, influenza activity slightly decreased with influenza A(H1N1)pdm09 predominance and influenza B/Yamagata co-circulating. In Saint Lucia, influenza-like illness was above the epidemic threshold with influenza A(H1N1)pdm09 virus circulating in recent weeks.



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

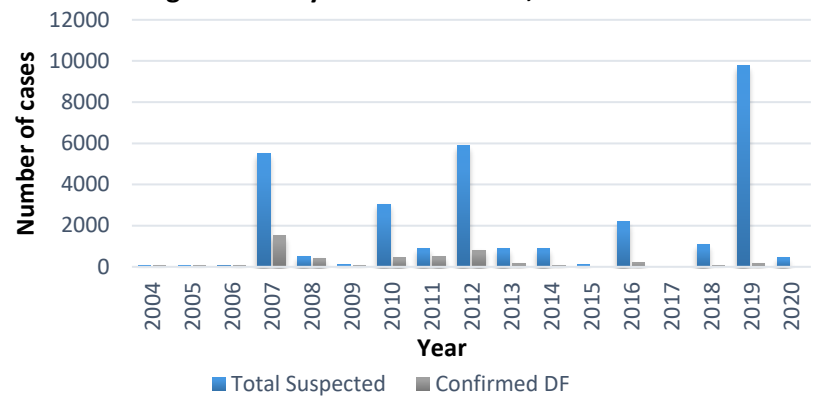
Dengue Bulletin

May 10, 2020-May 16, 2020 Epidemiological Week 20

Epidemiological Week 20

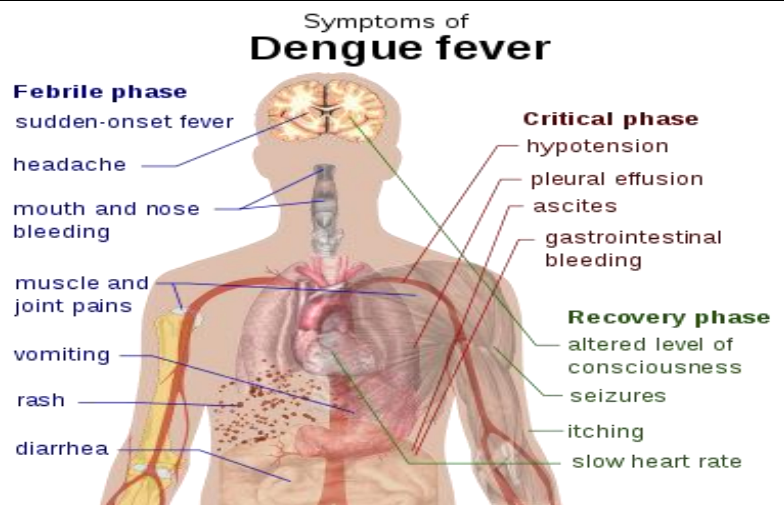


Dengue Cases by Year: 2004-2020, Jamaica



Reported suspected and confirmed dengue with symptom onset in week 20 of 2020

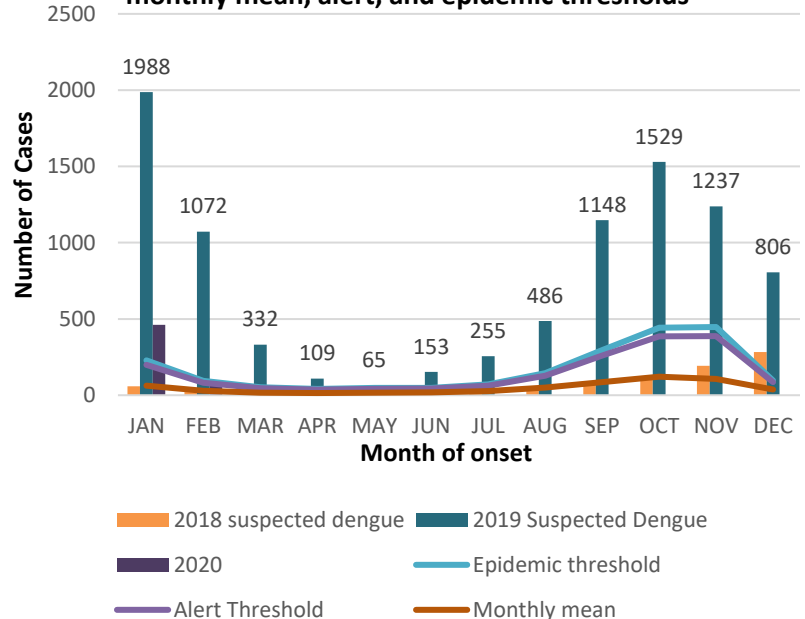
	2020	
	EW 20	YTD
Total Suspected Dengue Cases	0**	588**
Lab Confirmed Dengue cases	0**	1**
CONFIRMED Dengue Related Deaths	0**	1**



Points to note:

- ** figure as at May 21 , 2020
- Only PCR positive dengue cases are reported as confirmed.
- IgM positive cases are classified as presumed dengue.

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



7 NOTIFICATIONS-
All clinical sites



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COVID-19 Epidemiological Report

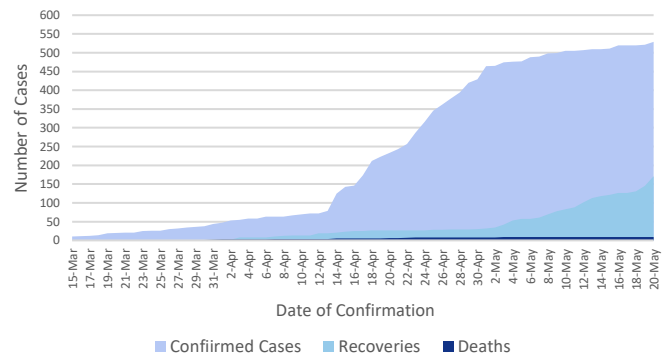
Data as at May 20, 2020



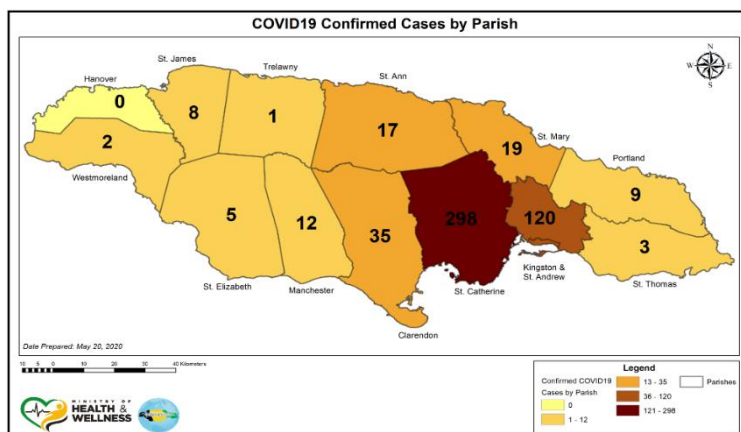
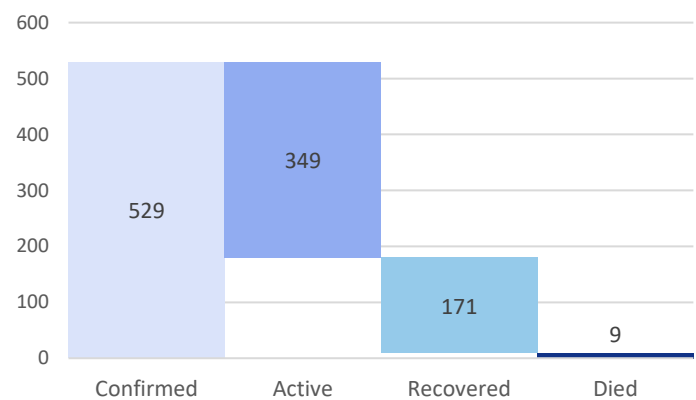
Key Points

- Jamaica has reported **529 confirmed cases** of COVID-19
 - 50 imported
 - 26 local transmissions (not epidemiologically linked)
 - 206 contacts of a confirmed case
 - 234 related to a work place cluster
 - 13 under investigation
- 19.3 per 100,000 cumulative incidence
- 13/14 parishes have reported cases
- 56% of cases were reported from St. Catherine
- 317 (60%) cases were female and 212 (40%) were male
- 9 (1.7%) confirmed cases have died
- 56% of all deaths were in person 60 years and older and 67% of deaths were male
- 171 (32%) cases have Recovered
- 11 (2.1%) cases have been Critically Ill
- 10 (1.9%) cases have been Moderately Ill
- 46 (8.7%) cases had at least one underlying illness while 100% of deaths had at least one underlying illness

Number of Confirmed COVID-19 Cases, Recoveries and Deaths, Jamaica from March 15, 2020 to May 20, 2020



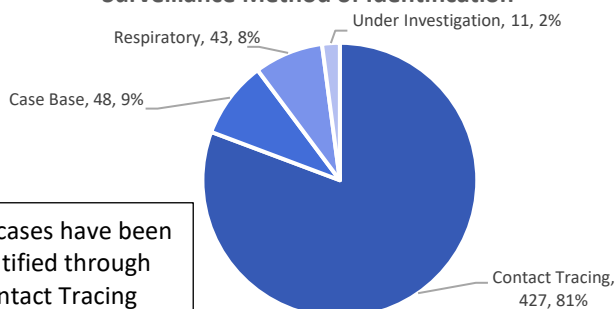
Clinical Status of Confirmed Cases (n=529)



Distribution by Community with Confirmed Cases ≥ 10

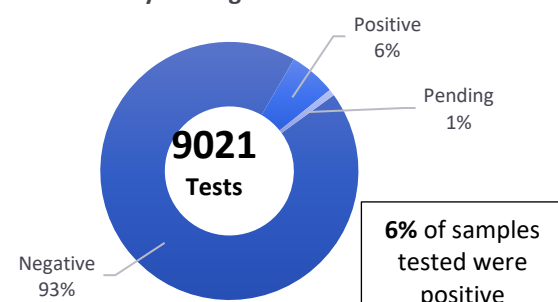
Case Count	Community	Parish
35	Linstead	St. Catherine
34	Old Harbour	St. Catherine
22	Greater Portmore	St. Catherine
19	Waterford	St. Catherine
17	Ensom	St. Catherine
16	Ewarton	St. Catherine
11	Constant Spring	St. Andrew
11	Bog Walk	St. Catherine
10	Greendale	St. Catherine
10	Gregory Park	St. Catherine

Surveillance Method of Identification



Most cases have been identified through Contact Tracing

Laboratory Testing for COVID-19



6% of samples tested were positive



8 NOTIFICATIONS- All clinical sites



INVESTIGATION REPORTS- Detailed Follow up for all Class One Events

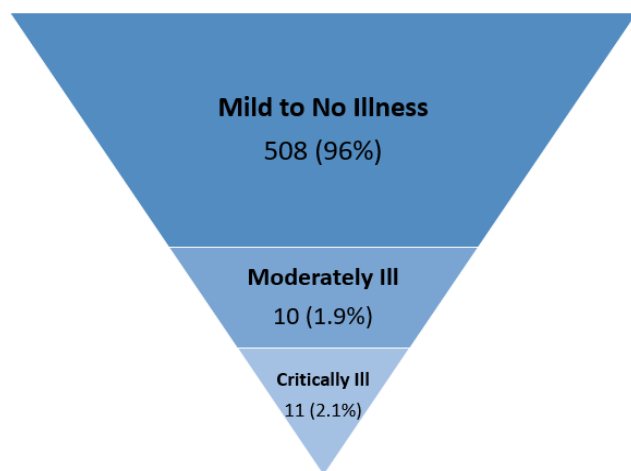
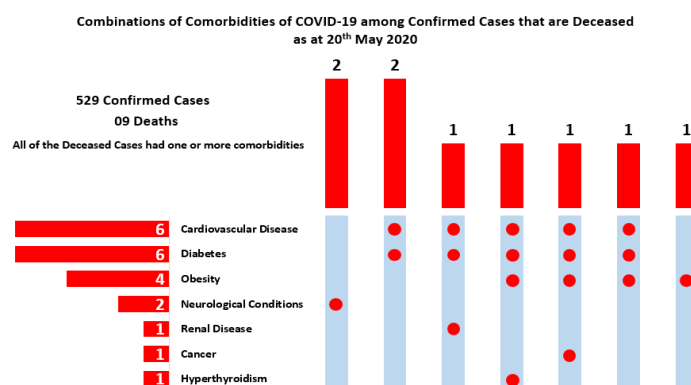
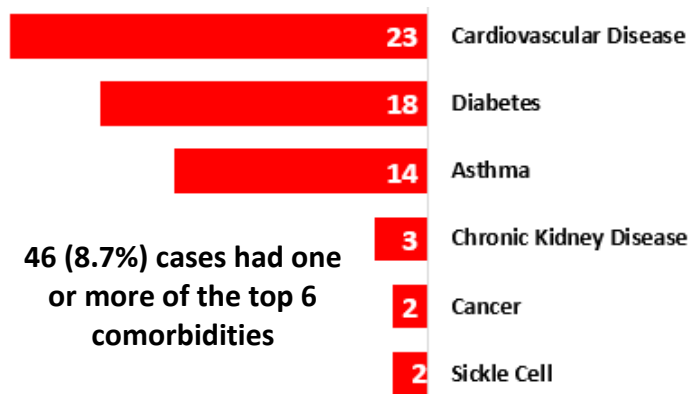
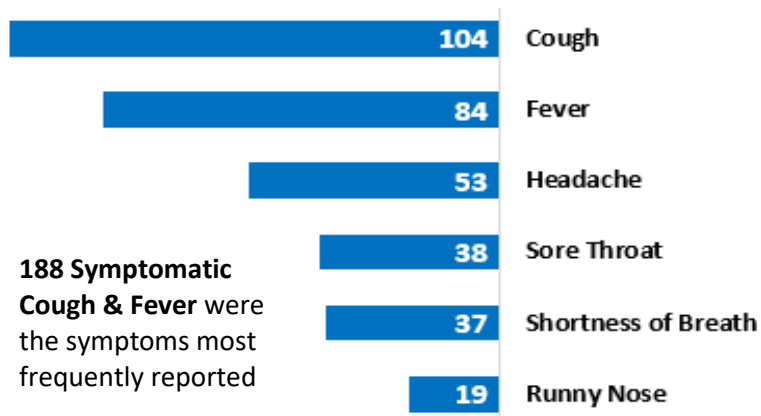
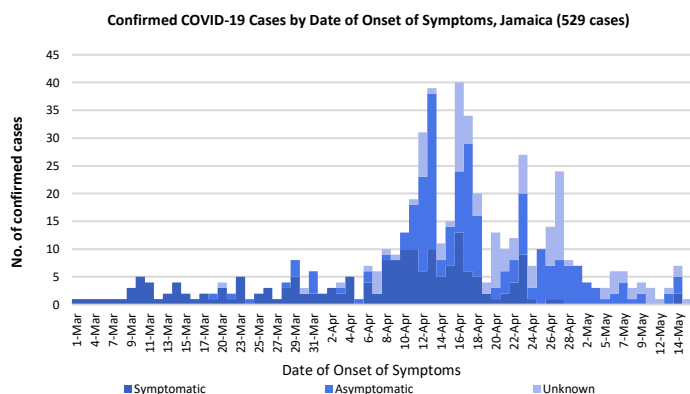


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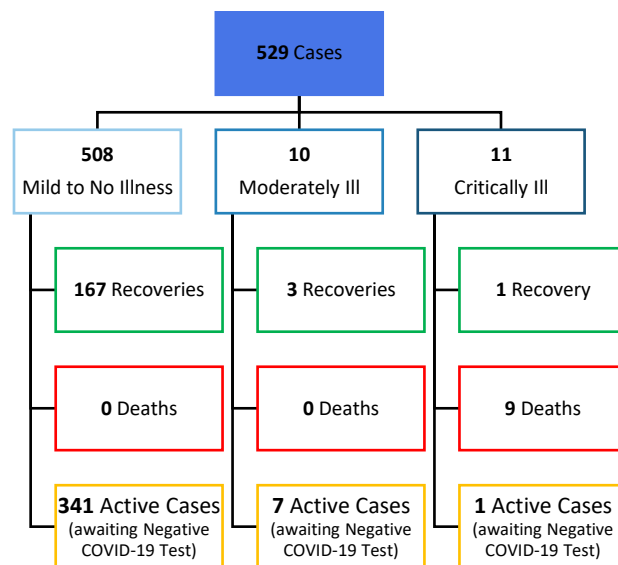


SENTINEL REPORT- 78 sites. Automatic reporting

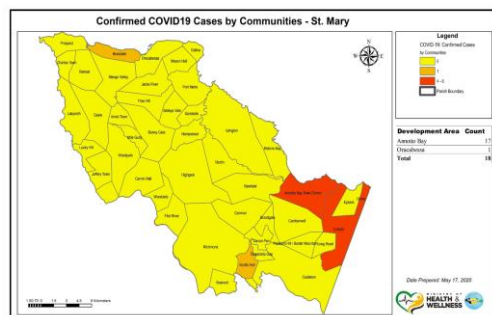
CLINICAL STATUS OF CONFIRMED COVID-19 CASES



Of note, among the active cases there are no moderately or critically ill cases at this time.



CONTACT TRACING & COMMUNITY SURVEILLANCE IN ST. MARY



Case Count	Community
6	Enfield
6	Dover
4	Annotto Bay Town Centre
1	Boscobel
1	Scotts Hall

The St. Mary Health Department identified two (2) confirmed cases through Respiratory Surveillance in the communities of Enfield and Dover. Contact tracing identified 35 named contacts of which 14 additional COVID-19 cases were confirmed.

Additionally, Community Surveillance activities were conducted between May 3rd and 17th, 2020 in the three quarantine communities in St. Mary - Dover, Enfield and Annotto Bay:

- 2277 households visited with most households being visited twice
- 3440 persons assessed
- No Additional Cases Identified

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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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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1 NOTIFICATIONS-
All clinical
sites



INVESTIGATION
REPORTS- Detailed Follow
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