WEEKLY EPIDEMIOLOGY BULLETIN

NATIONAL EPIDEMIOLOGY UNIT, MINISTRY OF HEALTH & WELLNESS, JAMAICA

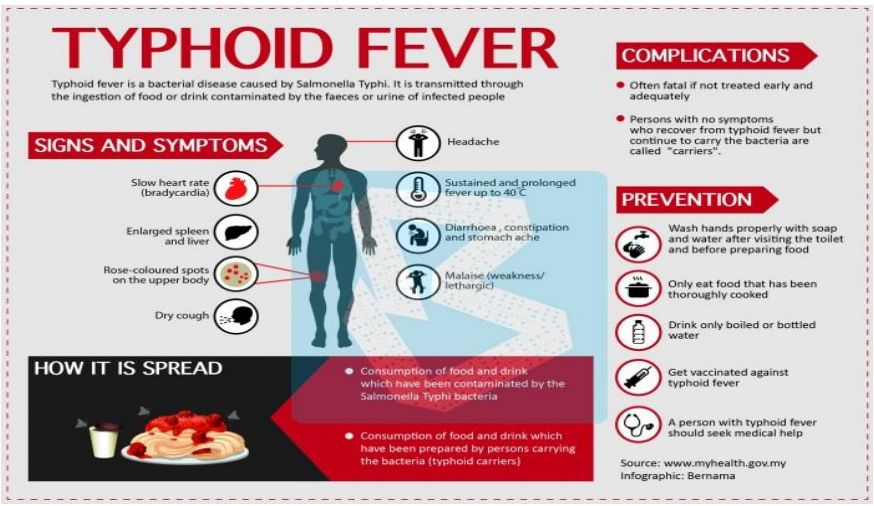
Biological Weapons: Series 8 of 10: Typhoid

Overview: Typhoid fever is a life-threatening systemic infection caused by the bacterium Salmonella enterica serovar Typhi (commonly known as Salmonella Typhi). Typhoid is usually spread through the ingestion of contaminated food or water. Typhoid occurs predominantly in association with poor sanitation and lack of clean drinking water, in both urban and rural settings. However, urbanization, with associated overcrowded populations and inadequate water and sanitation systems, as well as climate change have the potential to further increase the global burden of typhoid. In addition, increasing antibiotic resistance is making it easier for typhoid to spread and be treated. Every year, an estimated 11–20 million people get sick from typhoid and between 128 000 and 161 000 people die from it worldwide. Poor communities and vulnerable groups including children are at highest risk. Travellers are at risk of developing typhoid fever in many typhoid endemic countries, particularly in Asia and sub-Saharan Africa. Elsewhere, travellers are usually at risk when exposed to low standards of personal hygiene or food hygiene and poor water quality. Even vaccinated travellers should take care to avoid consumption of potentially contaminated food and water as vaccination does not confer 100% protection.

Symptoms and Treatment: Salmonella Typhi lives only in humans. In persons with typhoid fever the bacteria initially enter through the intestinal tract and eventually invade the bloodstream. The resulting illness is often non-specific and clinically non-distinguishable from other febrile illnesses. Symptoms include: **1.** prolonged high fever, **2**.fatigue, **3.** Headache, **4**. Nausea, **5.** abdominal pain, **6**. constipation or diarrhoea, **7.** rash, in some cases. Severe cases may lead to serious complications or even death.

Typhoid fever can be treated with antibiotics. As resistance to antibiotics has emerged including to fluoroquinolones, newer antibiotics such as cephalosporins and azithromycin are used in the affected regions. However, increasing resistance to cephalosporins has been reported, including the emergence in 2017 of an extensively drug resistant strain of Salmonella Typhi. Resistance to azithromycin has been reported sporadically. Even when the symptoms go away, approximately 2-5% of cases can go on to become chronic carriers and contribute to the spread of typhoid through ongoing faecal shedding of the bacteria and contamination of water and food. It is important for people being treated for typhoid fever to do the following: 1. Take prescribed antibiotics for as long as the doctor has prescribed. 2. Wash their hands with soap and water after using the bathroom, and avoid preparing or serving food to other people. This will lower the chance of passing the infection on to someone else. 3. Have their doctor test (after the antibiotic course) to ensure that no Salmonella Typhi bacteria remain in their body.

Prevention and Control: Access to safe water and adequate sanitation, health education, appropriate hygiene among food handlers, and typhoid vaccination are all effective strategies for prevention and control of typhoid. Vaccines have been used for many years to prevent typhoid: **1.** A newer injectable typhoid conjugate vaccine, consisting of the Vi antigen linked to tetanus toxoid protein, for children and adults from 6 months up to 45 years of age. **2.** An injectable vaccine based on the purified antigen for people over 2 years of age. **3.** A live attenuated oral vaccine in capsule formulation for people over 6 years of age. These vaccines do not provide long-lasting immunity and are not approved for children younger than 2 years.



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

EPI WEEK 14

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Sentinel Surveillance in Jamaica

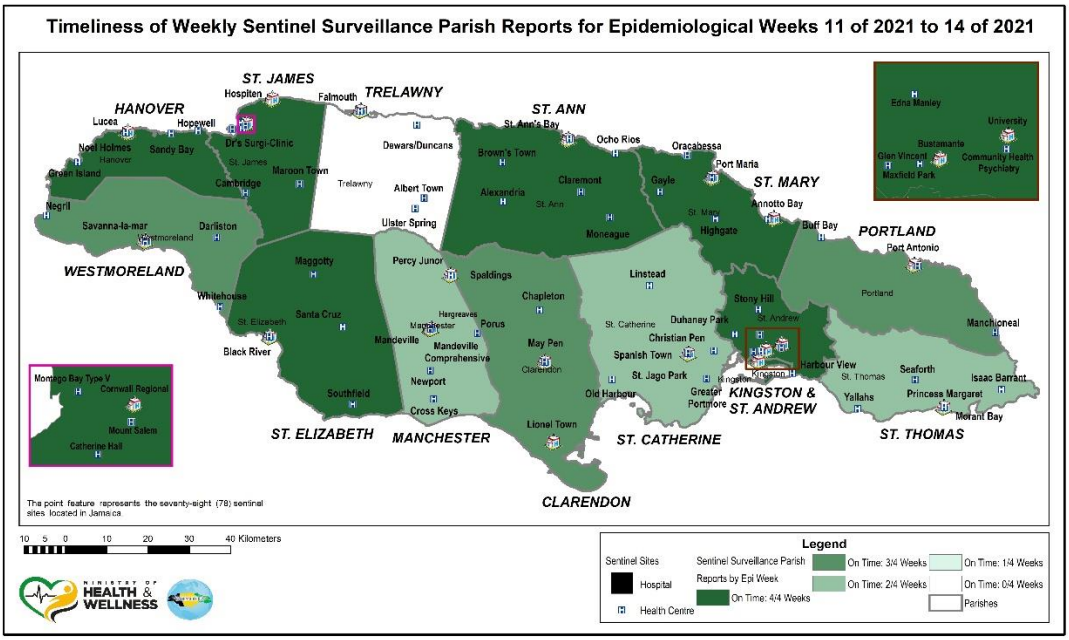
A syndromic surveillance system is good for early detection of and response to public health events.

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 – 11 2021 to 14 of 2021

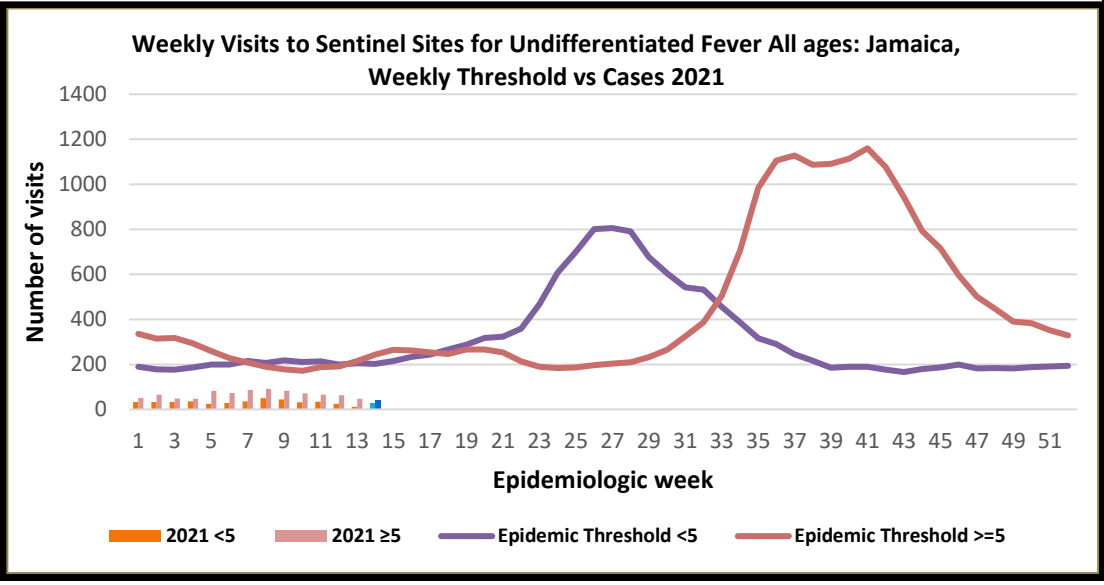
Parish health departments submit reports weekly by 3 p.m. on Tuesdays. Reports submitted after 3 p.m. are considered late.



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



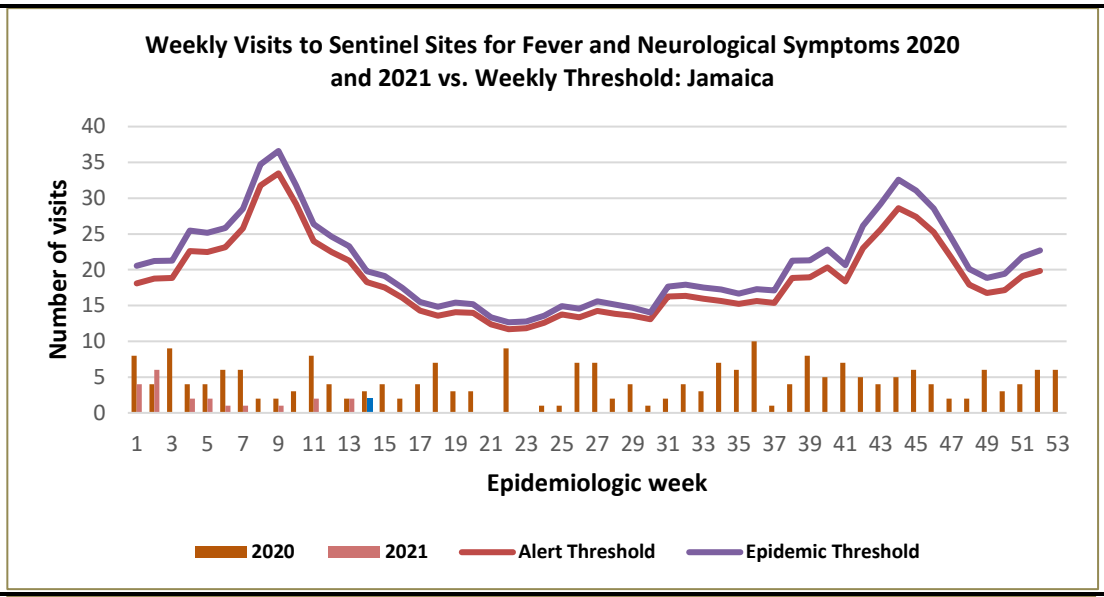
2 NOTIFICATIONS- All clinical sites

INVESTIGATION REPORTS- Detailed Follow up for all Class One Events

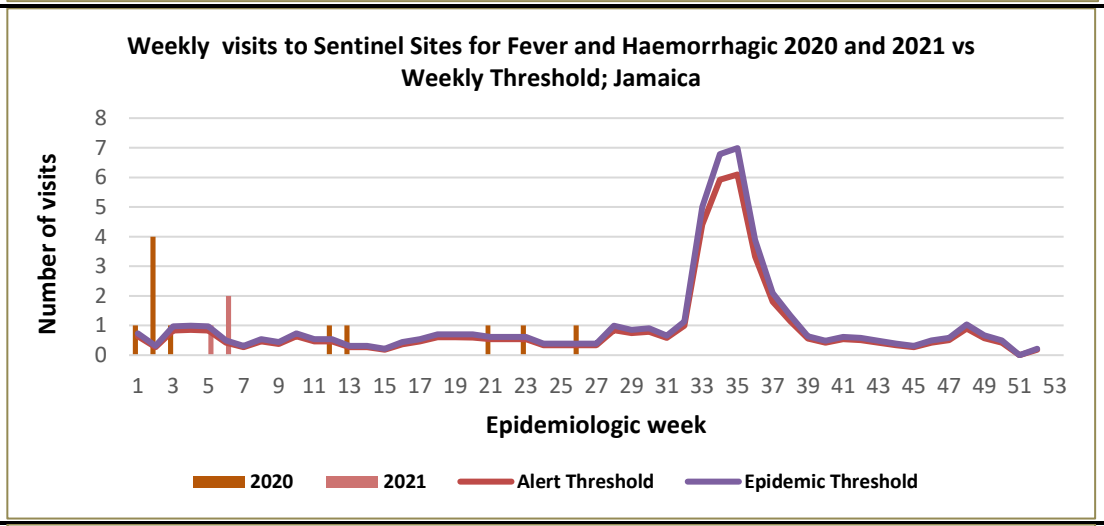
HOSPITAL ACTIVE SURVEILLANCE- 30 sites. Actively pursued

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).

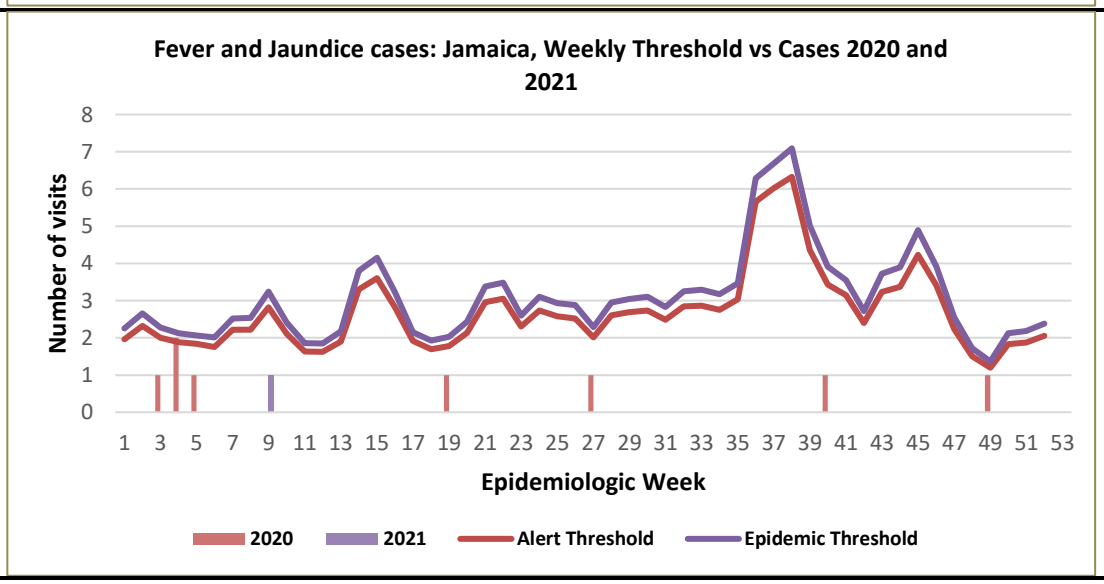


FEVER AND HAEMORRHAGIC
Temperature of >38^0C /100.4^0F (or recent history of fever) in a previously healthy person presenting with at least one haemorrhagic (bleeding) manifestation with or without jaundice.



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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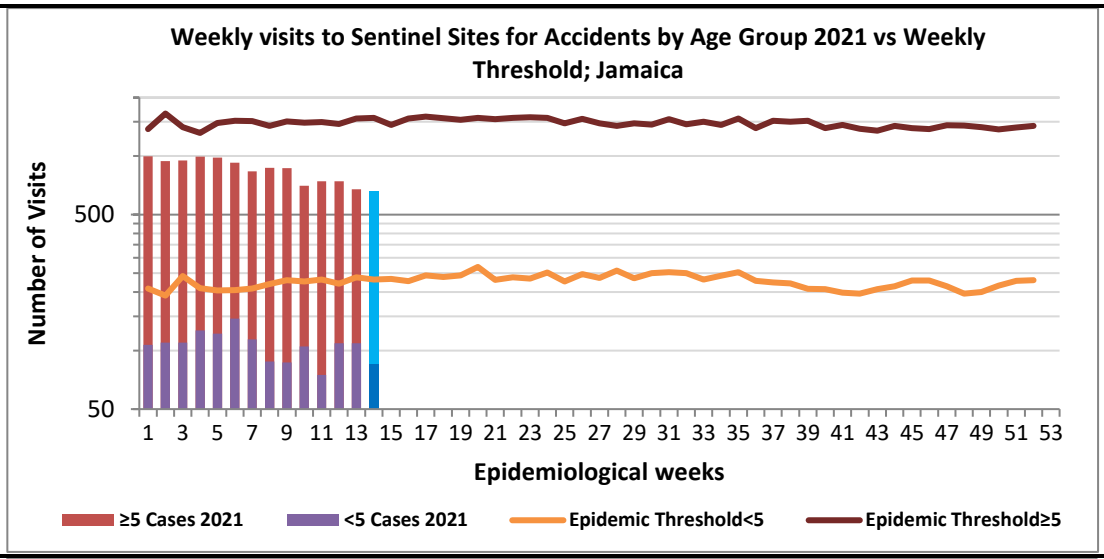
ACCIDENTS

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

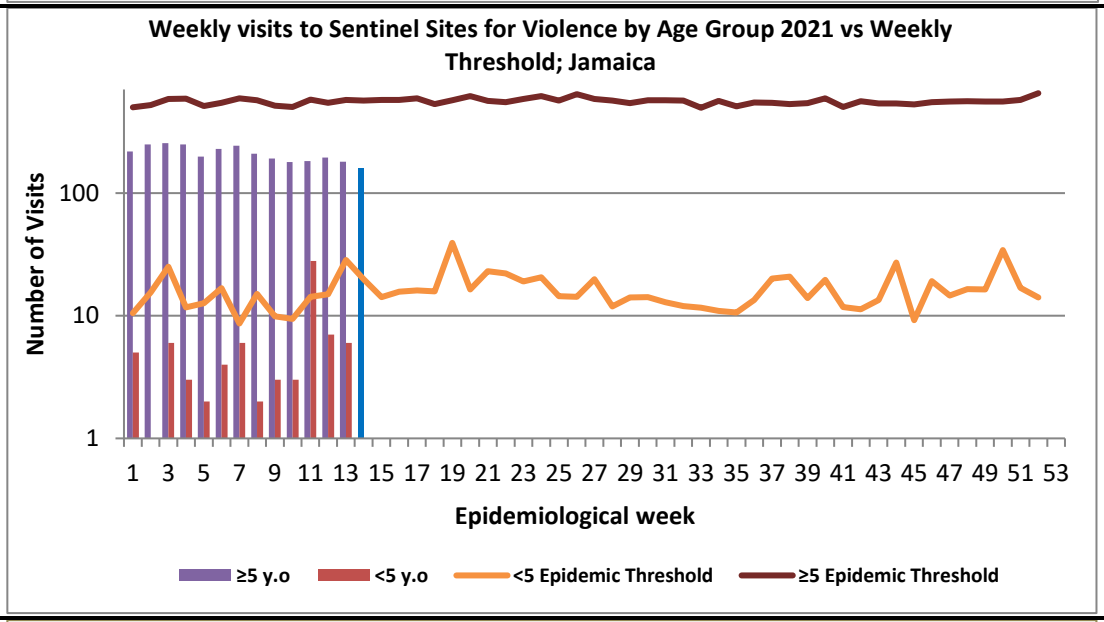
KEY

VARIATIONS OF BLUE SHOW CURRENT WEEK



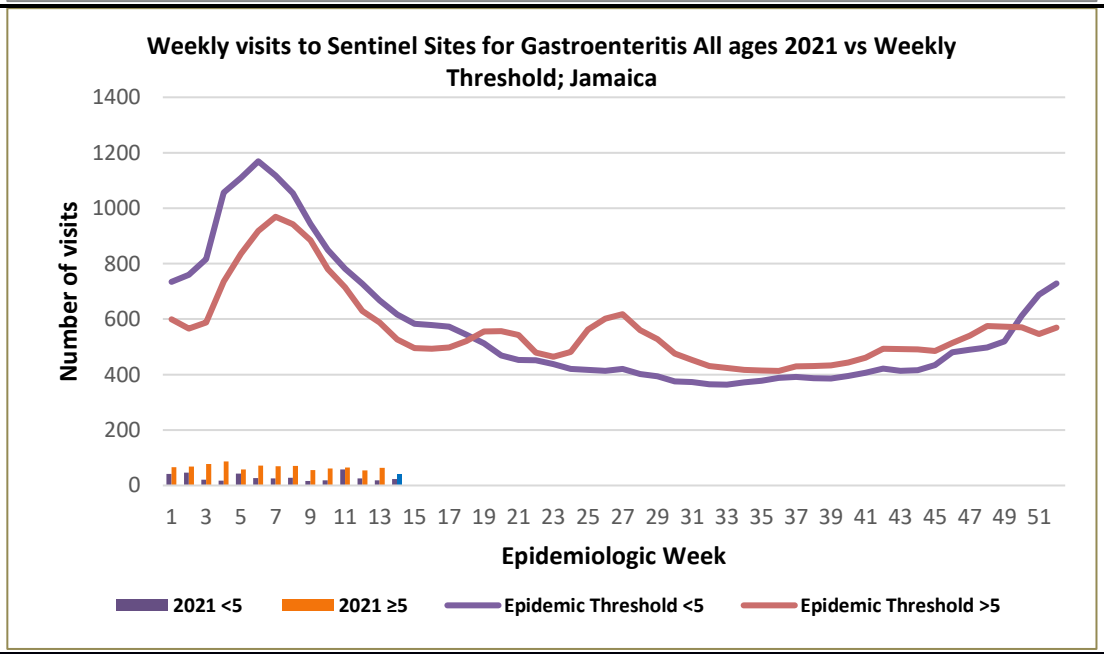
VIOLENCE

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[α] CURRENT YEAR 2021	PREVIOUS YEAR 2020
NATIONAL /INTERNATIONAL INTEREST	Accidental Poisoning		0[β]	37
	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]		3	12
	Ophthalmia Neonatorum		0	38
	Pertussis-like syndrome		0	0
	Rheumatic Fever		0	0
	Tetanus		0	0
	Tuberculosis		0	10
	Yellow Fever		0	0
	Chikungunya[ε]		0	0
	Zika Virus[θ]		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.

[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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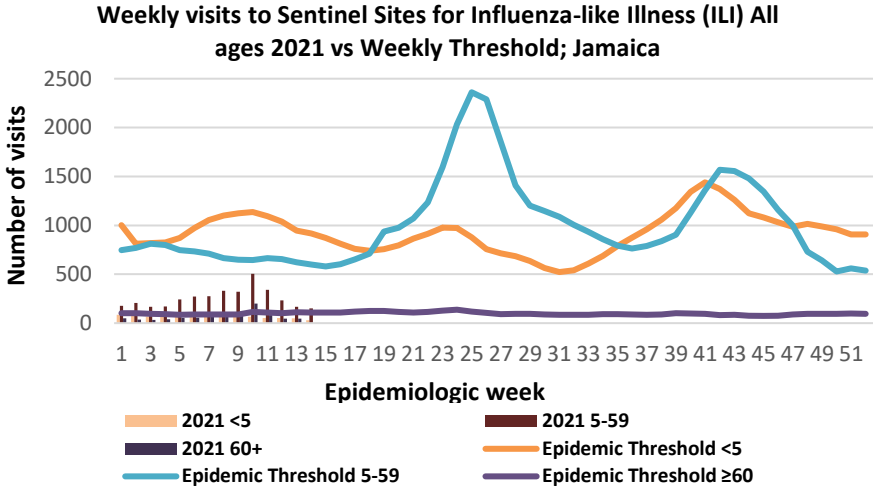
NATIONAL SURVEILLANCE UNIT INFLUENZA REPORT

EW 14

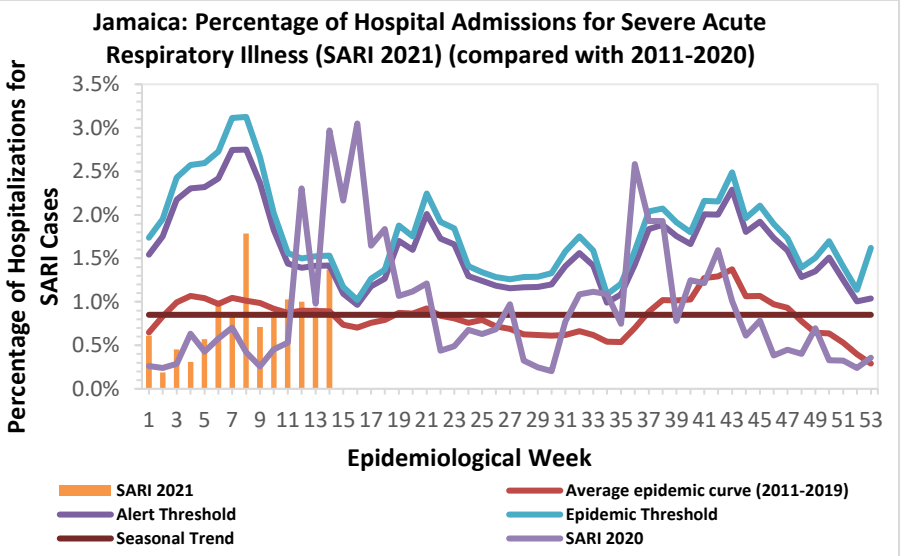
April 04, 2021 – April 10, 2021 Epidemiological Week 14

	EW 14	YTD
SARI cases	18	174
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



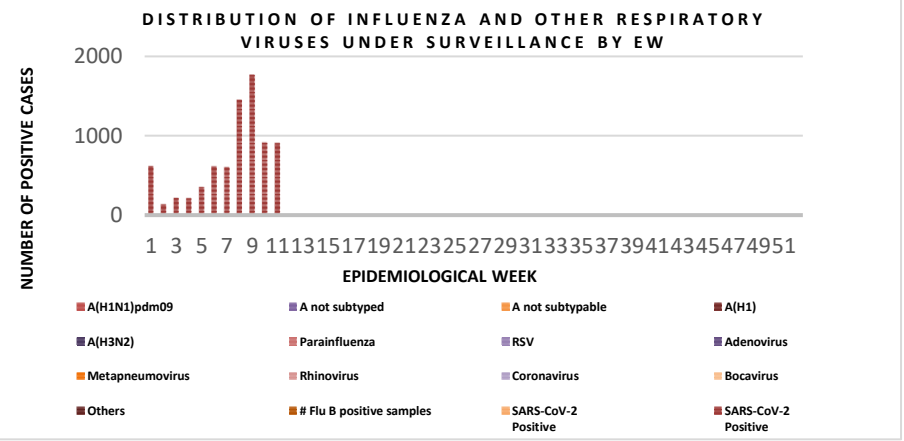
Epi Week Summary

During EW 14, 18 (eighteen) SARI admissions were reported.



Caribbean Update EW 14

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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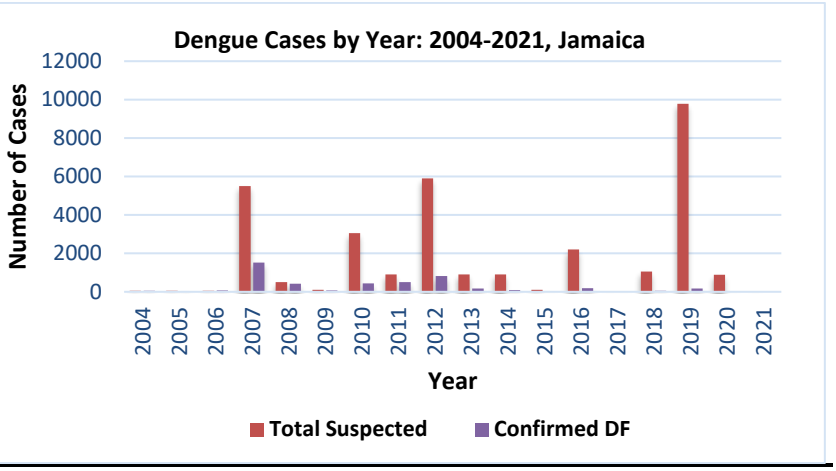
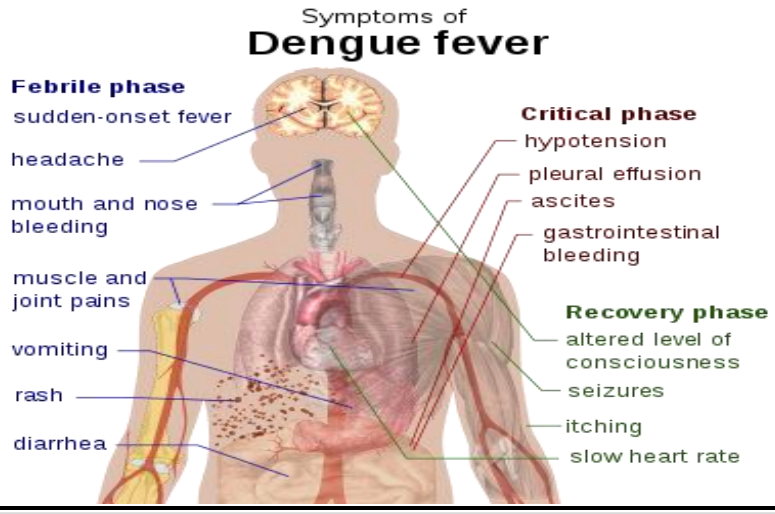
Dengue Bulletin

April 04, 2020 – April 10, 2021 Epidemiological Week 14 | Epidemiological Week 14



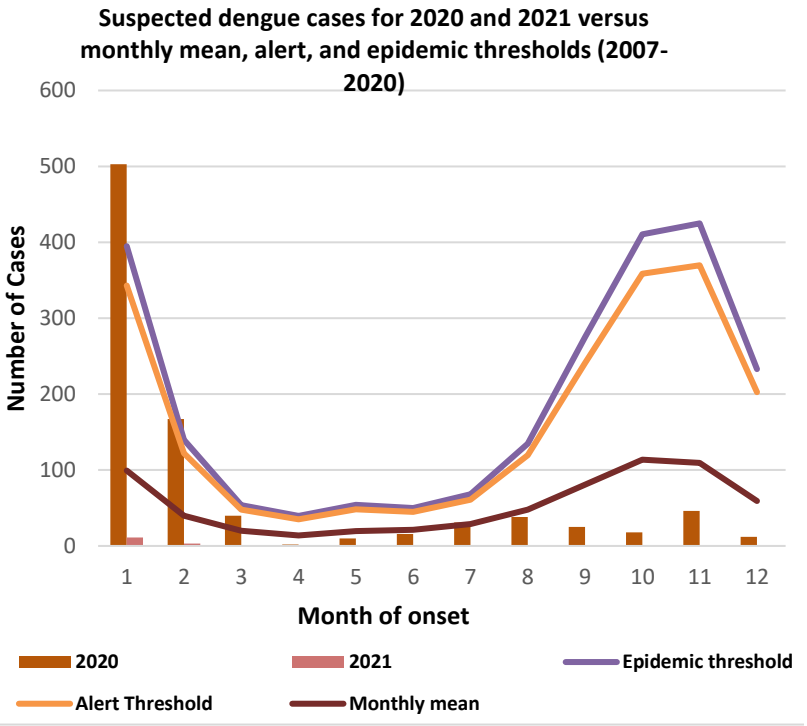
Reported suspected and confirmed dengue with symptom onset in week 14 of 2021

	2021*	
	EW 14	YTD
Total Suspected Dengue Cases	0	15
Lab Confirmed Dengue cases	0	0
CONFIRMED Dengue Related Deaths	0	0



Points to note:

- *Figure as at April 16, 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 the Nutritional Status of HIV- positive Children living in Family Homes and an 'Institutionalized' Children's Home

S Dawson, S Robinson, J DeSouza
Epidemiology Research and Training Unit, Ministry of Health, Kingston, Jamaica

Objective: To assess the nutritional status of HIV-infected children living in family homes and in an institution.

Design and Method: A cross-sectional descriptive study was conducted involving 31 HIV- positive children with anthropometric measurements used as outcome indicators. The children who met the inclusion criteria were enrolled, and nutritional statuses for both sets of children were assessed and compared.

Results: Fifteen of the children (48.4%) lived in family homes and sixteen (51.6%) in the institution, with a mean age of 7.2 ± 3.2 years. Significant differences between the two settings were found for the means, Weight-For-Height, WFH (p=0.020) and Body Mass Index, BMI (p=0.005); children in family homes having significantly better WFH and BMI. Four of the children (13.3%) were underweight; 3 from the institution (18.8%) and 1 (6.7%) from a family home. Two children (6.9%) were found to be 'at risk' of being overweight.

Conclusion: Although anthropometric indices for most of these children are within the acceptable range, there seems to be significant differences in nutritional status between infected children resident in family homes, and those in the institution. The factors responsible for such differences are not immediately obvious, and require further investigation. The influence of ARV therapy on nutritional outcomes in these settings require prospective studies which include dietary, immunologic and biochemical markers, in order to provide data that may help to improve the medical nutritional management of these children.

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