

WEEKLY EPIDEMIOLOGY BULLETIN

NATIONAL EPIDEMIOLOGY UNIT, MINISTRY OF HEALTH & WELLNESS, JAMAICA

EPI WEEK 07

Biological Weapons: Series 1 of 10: Smallpox

Overview: Smallpox is an acute contagious disease caused by the variola virus, a member of the orthopoxvirus family. It was one of the most devastating diseases known to humanity and caused millions of deaths before it was eradicated. It is believed to have existed for at least 3000 years. The smallpox vaccine, created by Edward Jenner in 1796, was the first successful vaccine to be developed. He observed that milkmaids who previously had caught cowpox did not catch smallpox and showed that a similar inoculation could be used to prevent smallpox in other people. The World Health Organization launched an intensified plan to eradicate smallpox in 1967. Widespread immunization and surveillance were conducted around the world for several years. The last known natural case was in Somalia in 1977. In 1980 WHO declared smallpox eradicated – the only infectious disease to achieve this distinction. This remains among the most notable and profound public health successes in history.

Symptoms: Early symptoms of smallpox include high fever, fatigue and severe back pain, and less often, abdominal pain and vomiting. Two to 3 days later the virus produces a characteristic rash with bumps full of a clear liquid, which later fill with pus and finally develop a crust that dries and falls off. The rash begins on the face and hands, then spreads to the rest of the body. Lesions develop in the mucous membranes of the nose and mouth and ulcerate soon after formation. Smallpox is transmitted from person to person via infective droplets during close contact with infected people who have symptoms of the disease, or in some cases through contaminated clothing and bedding. It has an incubation period of 7–17 days after exposure and only becomes infectious once a fever develops. People remain infectious until the last scabs fall off. Smallpox was fatal in up to 30% of cases.

WHO response: The period since eradication has been defined by a lengthy and complex debate focussed on the destruction of the last remaining stocks of live variola virus. In 1996, at the 49th World Health Assembly, Member States decided to have this stock destroyed in June 1999, and only to allow small samples to be kept for research purposes at two designated secure laboratories – one in the United States and one in the Russian Federation. Temporary retention of the existing stocks of variola virus are used for further essential research, which is overseen by the Advisory Committee for Variola Virus Research. This group meets on an annual basis.

Facts About SMALLPOX

- Smallpox is thought to be traced back to the Egyptian Empire around the 3rd century BCE (Before Common Era), where a smallpox-like rash was found in three mummies.
- In 1796, an English doctor named Edward Jenner was a contributor to the development of smallpox vaccination.
- In 1975, Rahima Banu, a 3-year-old girl from Bangladesh was the last person to naturally contract variola major (the most common type of smallpox).
- In 1959, the World Health Organization (WHO) commenced a plan to get rid of smallpox, but their campaign didn't have funds, commitment from countries, personnel and had shortage of vaccine donations.
- On 8 May, 1980, the 33rd World Health Assembly officially declared the world is free of smallpox.
- In 1978, Janet Parker was the last person to die of smallpox.
- In 1967, The Intensified Eradication Program started to eradicate smallpox, but by the time it started smallpox had already been eliminated from North America in 1952 and Europe in 1953. In 1971, smallpox was eradicated from South America, followed by Asia in 1975 and Africa in 1977.

SMALLPOX (Signs of rash)

boldsky source: cdc www.boldsky.com



SYNDROMES

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CLASS 1 DISEASES

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INFLUENZA

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DENGUE FEVER

PAGE 6



GASTROENTERITIS

PAGE 7



RESEARCH PAPER

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SENTINEL SYNDROMIC SURVEILLANCE

Sentinel Surveillance in Jamaica



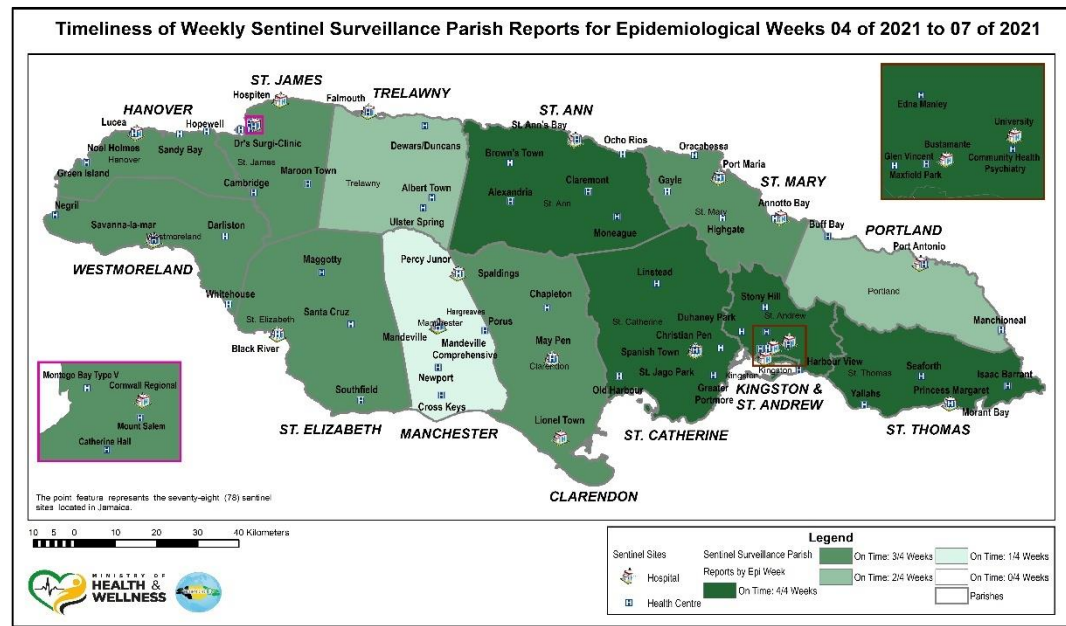
A syndromic surveillance system is good for early detection of and response to public health events.

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 - 4 2021 to 7 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

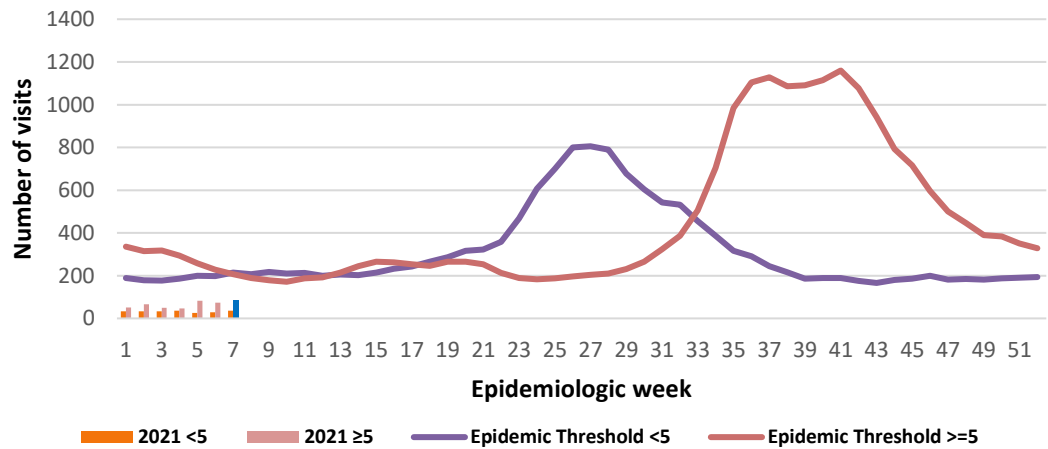
Temperature of $>38^{\circ}\text{C}$ / 100.4°F (or recent history of fever) with or without an obvious diagnosis or focus of infection.



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



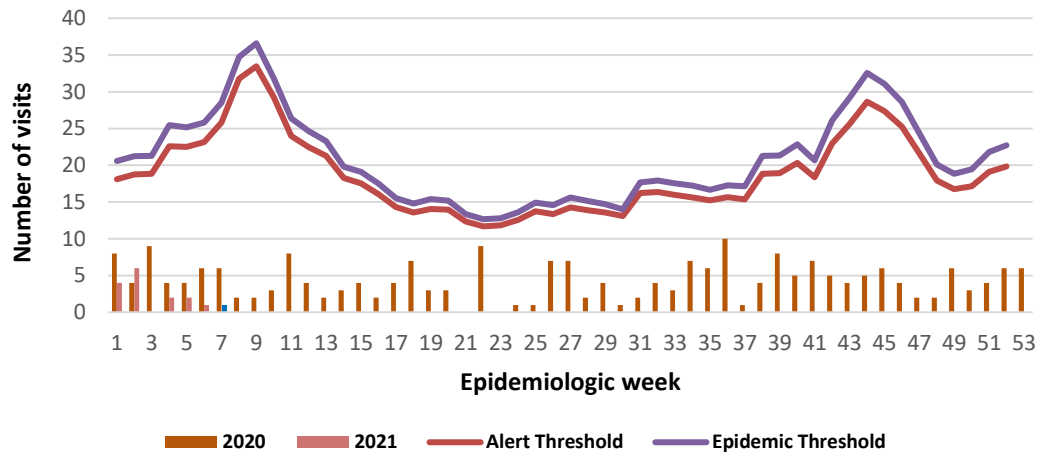
SENTINEL REPORT- 78 sites. Automatic reporting

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).



Weekly Visits to Sentinel Sites for Fever and Neurological Symptoms 2020 and 2021 vs. Weekly Threshold: Jamaica

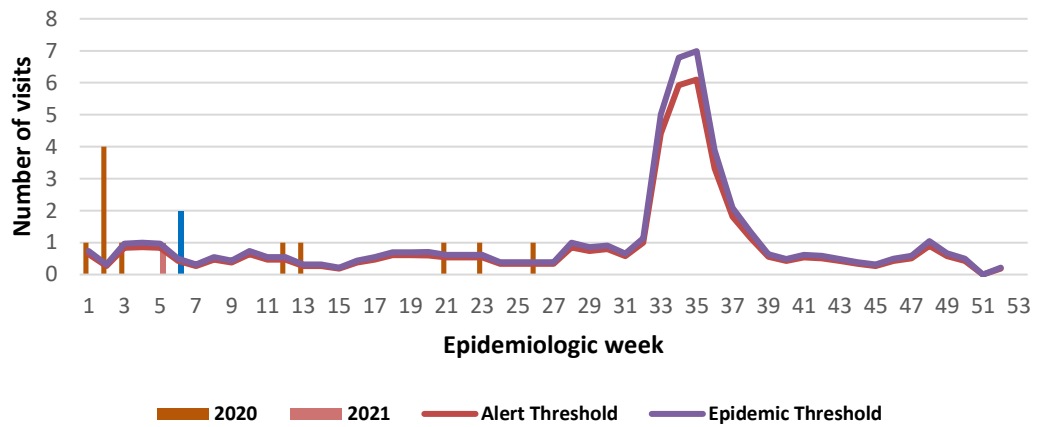


FEVER AND HAEMORRHAGIC

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 2020 and 2021 vs Weekly Threshold; Jamaica



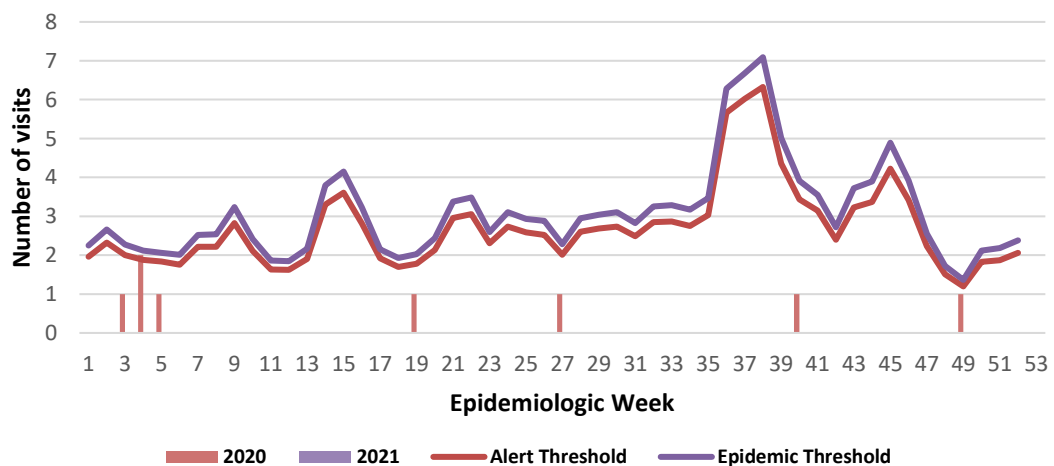
FEVER AND JAUNDICE

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 2020 and 2021



3 NOTIFICATIONS-
All clinical sites



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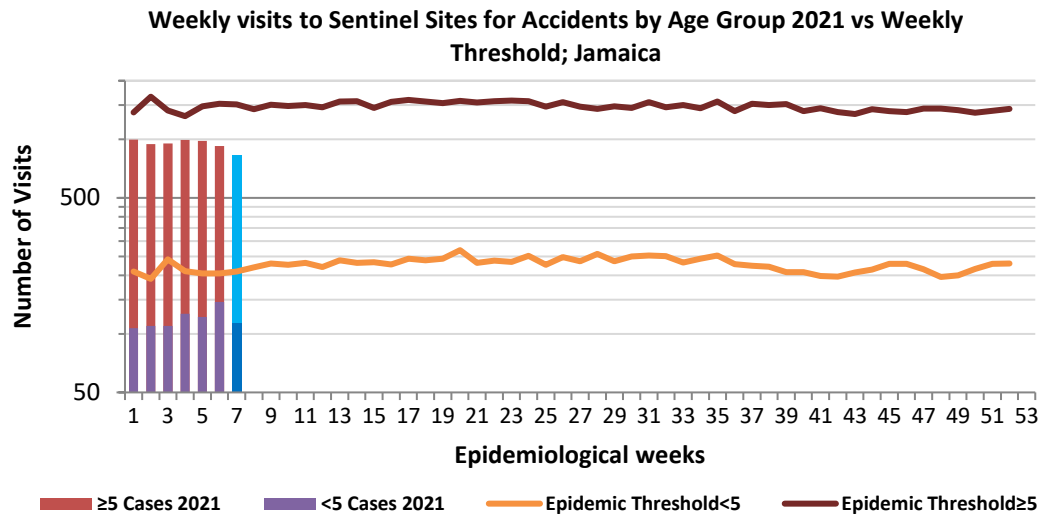
SENTINEL REPORT- 78 sites. Automatic reporting

ACCIDENTS

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

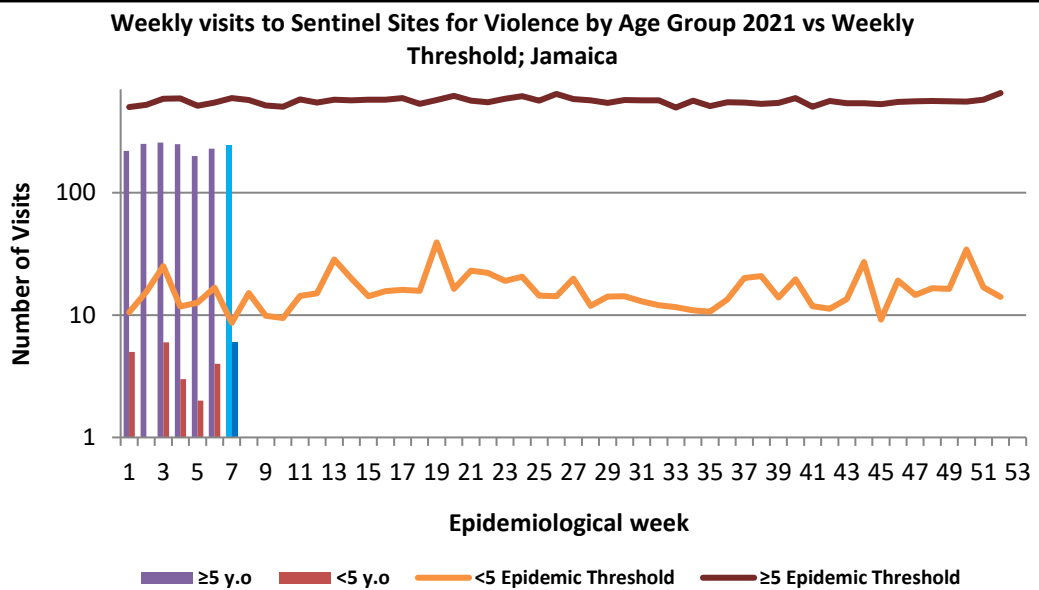
KEY

VARIATIONS OF BLUE SHOW CURRENT WEEK



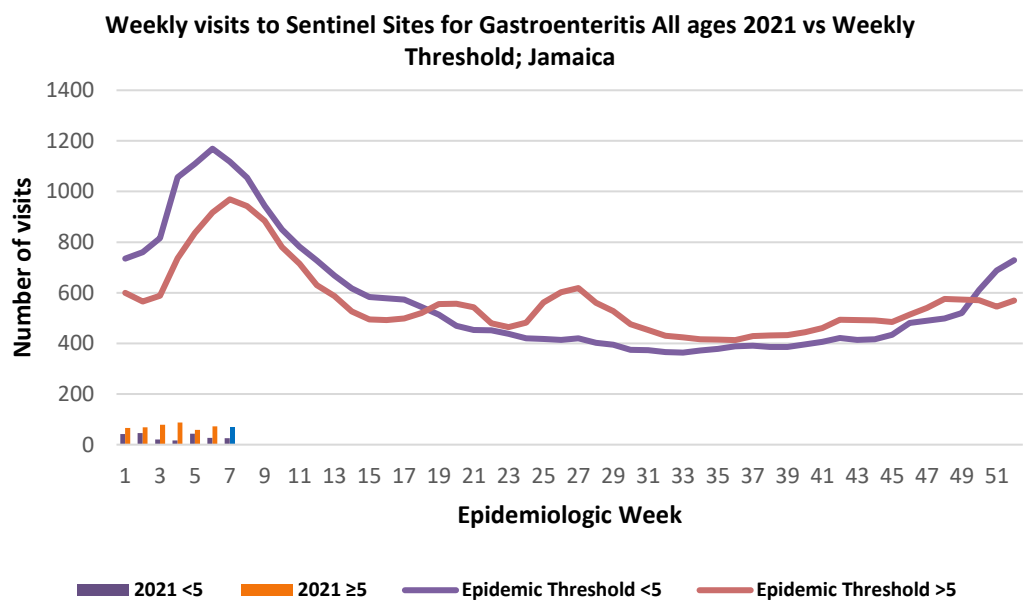
VIOLENCE

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



HOSPITAL ACTIVE SURVEILLANCE- 30 sites. Actively pursued



SENTINEL REPORT- 78 sites. Automatic reporting

- CLASS ONE NOTIFIABLE EVENTS		Comments		
	CLASS 1 EVENTS	Confirmed YTD ^α		
		CURRENT YEAR 2021	PREVIOUS YEAR 2020	
NATIONAL /INTERNATIONAL INTEREST	Accidental Poisoning	0 ^β	5	
	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	
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	0	3	
	Ophthalmia Neonatorum	0	10	
	Pertussis-like syndrome	0	0	
	Rheumatic Fever	0	0	
	Tetanus	0	0	
	Tuberculosis	0	0	
Yellow Fever	0	0		
Chikungunya ^ε	0	0		
Zika Virus ^θ	0	0		

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



5 NOTIFICATIONS- All clinical sites



INVESTIGATION REPORTS- Detailed Follow up for all Class One Events



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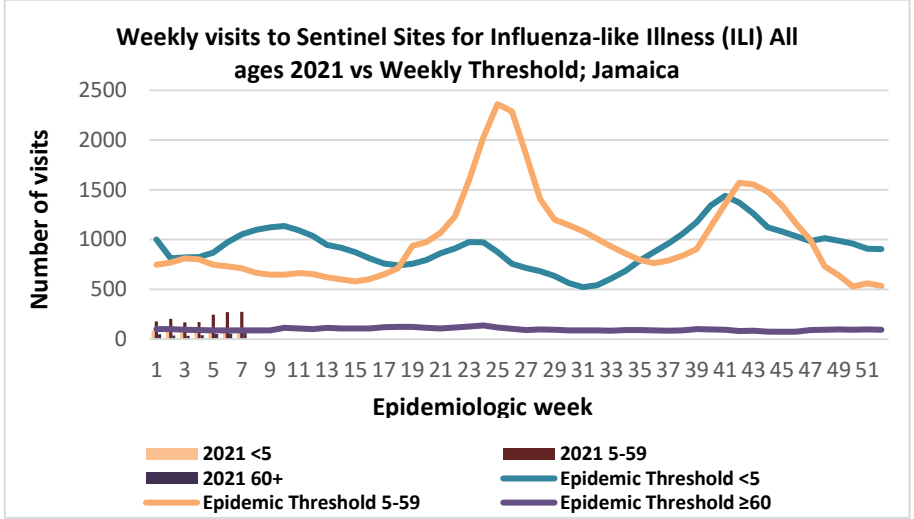
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NATIONAL SURVEILLANCE UNIT INFLUENZA REPORT

EW 7

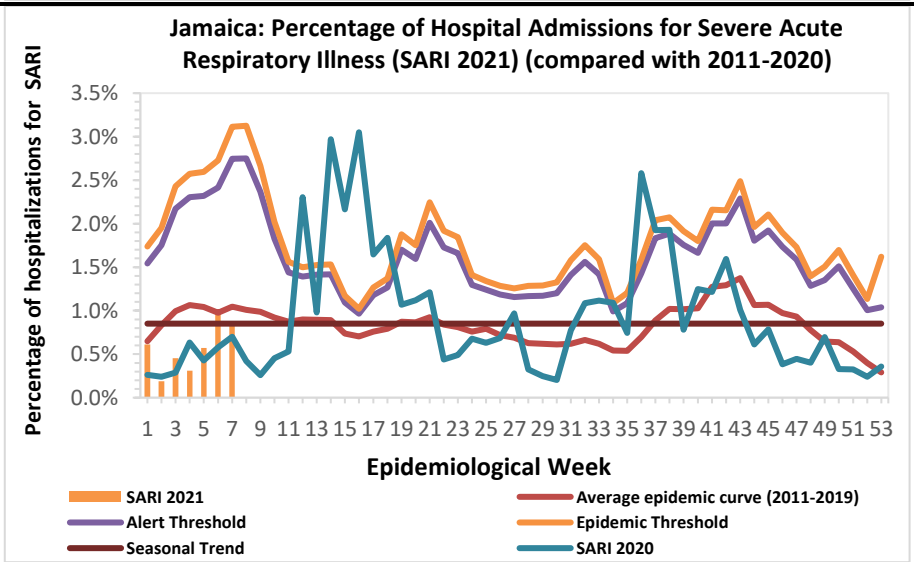
February 14, 2021 – February 20, 2021 Epidemiological Week 07

	EW 7	YTD
SARI cases	13	69
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



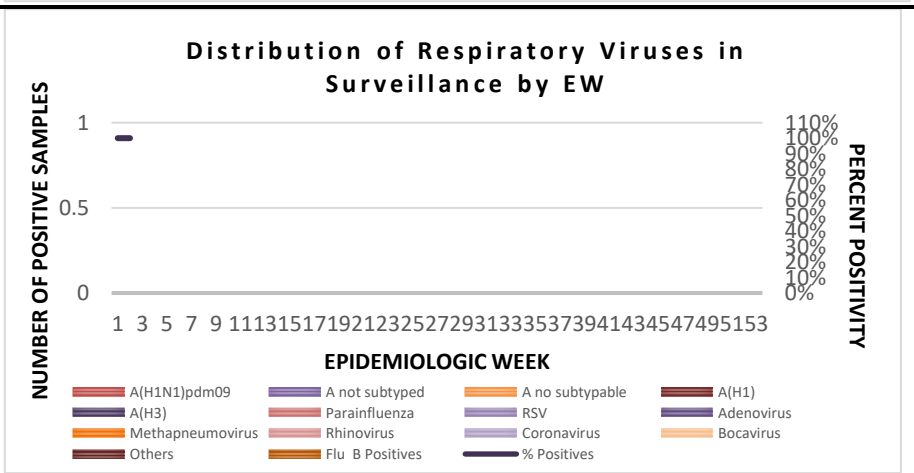
Epi Week Summary

During EW 07, 13 (thirteen) SARI admissions were reported.



Caribbean Update EW 07

Influenza and other respiratory virus activity remained low. In Jamaica, pneumonia activity increased above epidemic levels and SARS-CoV-2 activity continued elevated and increasing.



6 NOTIFICATIONS-
All clinical sites

INVESTIGATION REPORTS- Detailed Follow up for all Class One Events

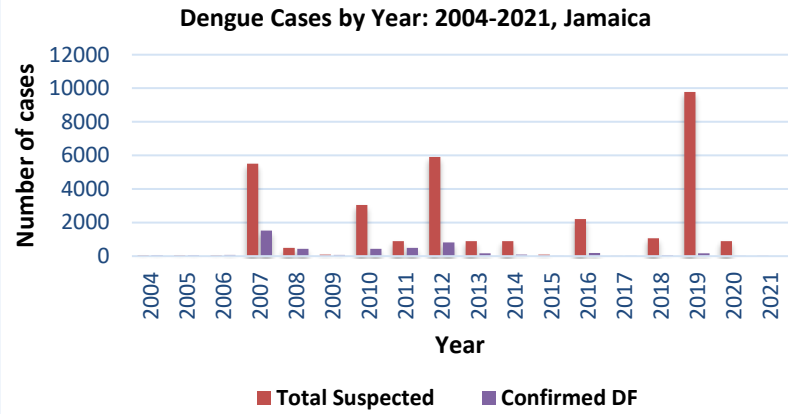
HOSPITAL ACTIVE SURVEILLANCE- 30 sites. Actively pursued

SENTINEL REPORT- 78 sites. Automatic reporting

Dengue Bulletin

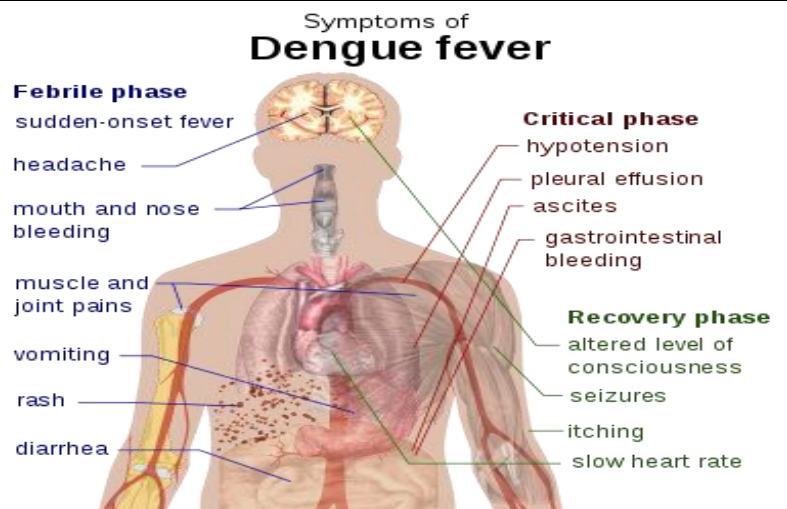
February 14, 2020 – February 20, 2021 Epidemiological Week 07

Epidemiological Week 07



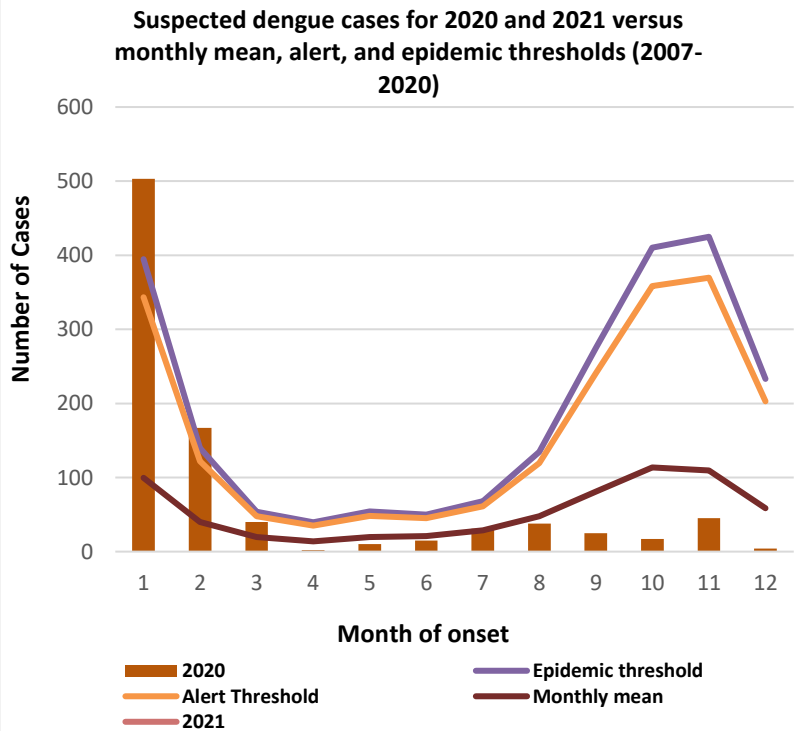
Reported suspected and confirmed dengue with symptom onset in week 07 of 2021

	2021*	
	EW 07	YTD
Total Suspected Dengue Cases	8	8
Lab Confirmed Dengue cases	0	0
CONFIRMED Dengue Related Deaths	0	0



Points to note:

- *Figure as at February 22, 2021
- Only PCR positive dengue cases are reported as confirmed.
- IgM positive cases are classified as presumed dengue.



<p>7 NOTIFICATIONS- All clinical sites</p>	<p>INVESTIGATION REPORTS- Detailed Follow up for all Class One Events</p>	<p>HOSPITAL ACTIVE SURVEILLANCE- 30 sites. Actively pursued</p>	<p>SENTINEL REPORT- 78 sites. Automatic reporting</p>
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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

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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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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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