

WEEKLY EPIDEMIOLOGY BULLETIN

NATIONAL SURVEILLANCE UNIT, MINISTRY OF HEALTH & WELLNESS, JAMAICA

Weekly Spotlight

Antimicrobial Resistance (Part 2)



What is the present situation?

Drug-resistance in bacteria

The global rise in antibiotic resistance poses a significant threat, diminishing the efficacy of common antibiotics against widespread bacterial infections. The 2022 Global Antimicrobial Resistance and Use Surveillance

System (GLASS) report highlights alarming resistance rates among prevalent bacterial pathogens. Median reported rates in 76 countries of 42% for third-generation cephalosporin-resistant *E. coli* and 35% for methicillin-resistant *Staphylococcus aureus* are a major concern. For urinary tract infections caused by *E. coli*, 1 in 5 cases exhibited reduced susceptibility to standard antibiotics like ampicillin, co-trimoxazole, and fluoroquinolones in 2020. This is making it harder to effectively treat common infections.

Klebsiella pneumoniae, a common intestinal bacterium, also showed elevated resistance levels against critical antibiotics. Increased levels of resistance potentially lead to heightened utilization of last-resort drugs like carbapenems, for which resistance is in turn being observed across multiple regions. As the effectiveness of these last-resort drugs is compromised, the risks increase of infections that cannot be treated. Projections by the Organization for Economic Cooperation and Development (OECD) indicate an anticipated twofold surge in resistance to last-resort antibiotics by 2035, compared to 2005 levels, underscoring the urgent need for robust antimicrobial stewardship practices and enhanced surveillance coverage worldwide.

Drug resistance in fungi

As drug-resistant fungal infections increase, WHO is monitoring their magnitude and public health impact. Fungal infections can be difficult to treat, including due to drug-drug interactions for patients with other infections (e.g. HIV). The emergence and spread of multi-drug resistant *Candida auris*, an invasive fungal infection, is of particular concern. Development of WHO's Fungal Priority Pathogens List (see below) included a comprehensive review of fungal infections and drug-resistant fungi globally.

Taken from WHO website on 19/December/2024

<https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance>

EPI WEEK 49



Syndromic Surveillance

Accidents

Violence

Pages 2-4



Class 1 Notifiable Events

Page 5



COVID-19

Page 6



Influenza

Page 7



Dengue Fever

Page 8



Research Paper

Page 9

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.

Table showcasing the Timeliness of Weekly Sentinel Surveillance Parish Reports for the Four Most Recent Epidemiological Weeks – 46 to 49 of 2024

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

KEY:
Yellow - late submission on Tuesday
Red - late submission after Tuesday

Epi week	Kingston and Saint Andrew	Saint Thomas	Saint Catherine	Portland	Saint Mary	Saint Ann	Trelawny	Saint James	Hanover	Westmoreland	Saint Elizabeth	Manchester	Clarendon
2024													
46	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	Late (T)	On Time	On Time	On Time
47	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time
48	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time
49	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time

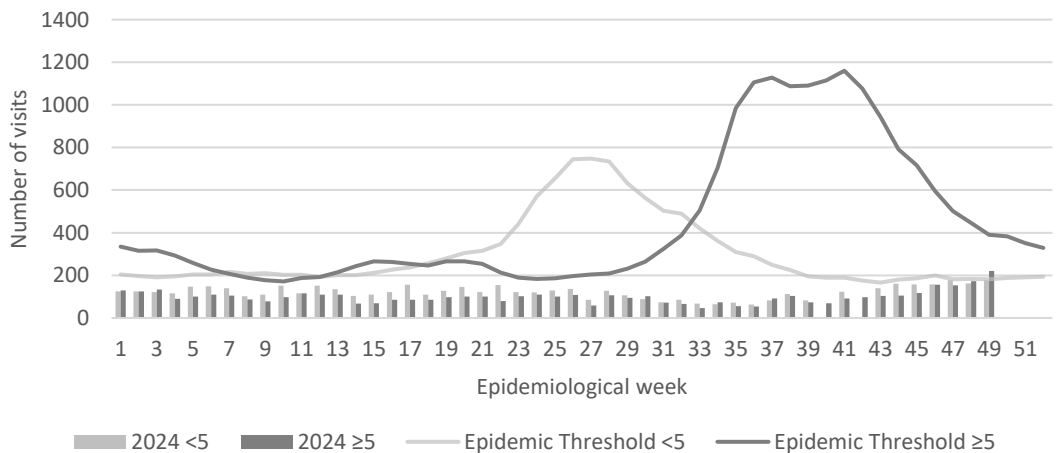
REPORTS FOR SYNDROMIC SURVEILLANCE

UNDIFFERENTIATED 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.



Weekly Visits to Sentinel Sites for Undifferentiated Fever All ages: Jamaica, Weekly Threshold vs Cases 2024



2 NOTIFICATIONS- All clinical sites



INVESTIGATION REPORTS- Detailed Follow up for all Class One Events



HOSPITAL ACTIVE SURVEILLANCE- 30 sites. Actively pursued



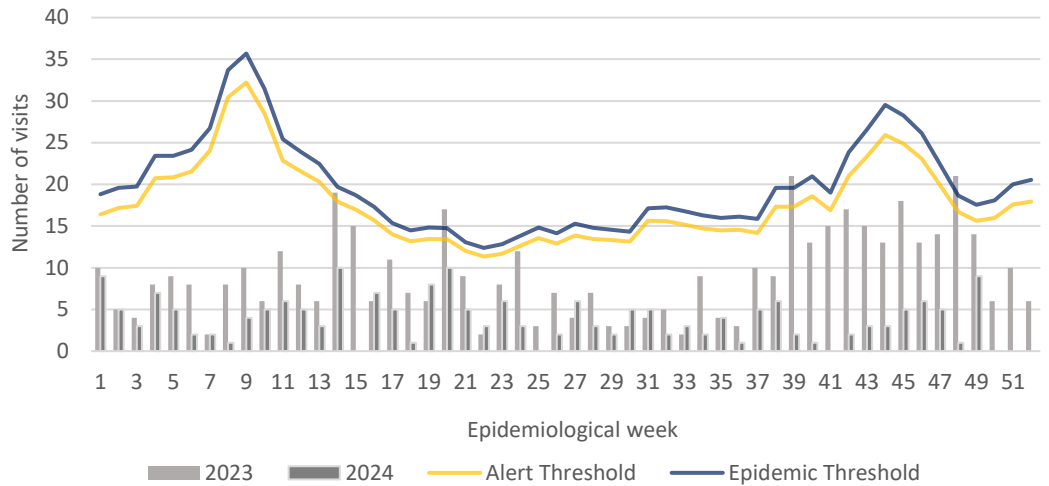
SENTINEL REPORT- 78 sites. Automatic reporting

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 2023 and 2024 vs. Weekly Threshold: Jamaica

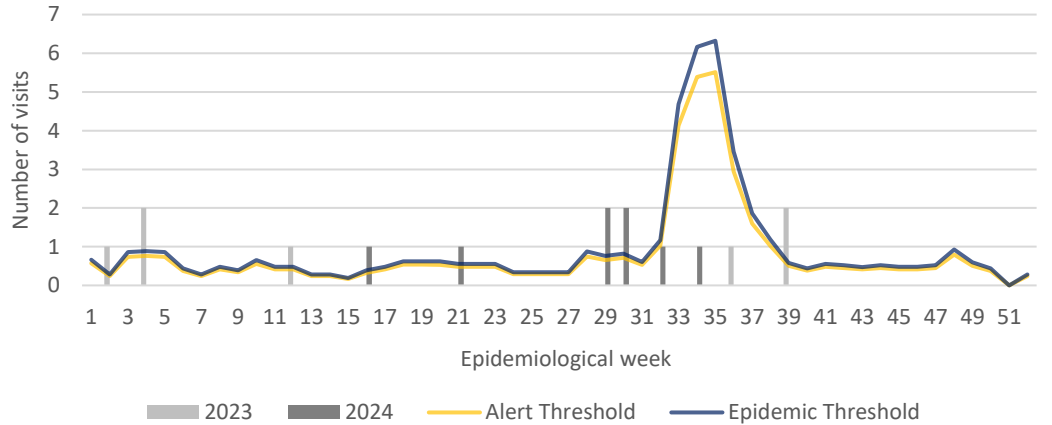


FEVER AND HAEMORRHAGIC

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 2023 and 2024 vs Weekly Threshold; Jamaica



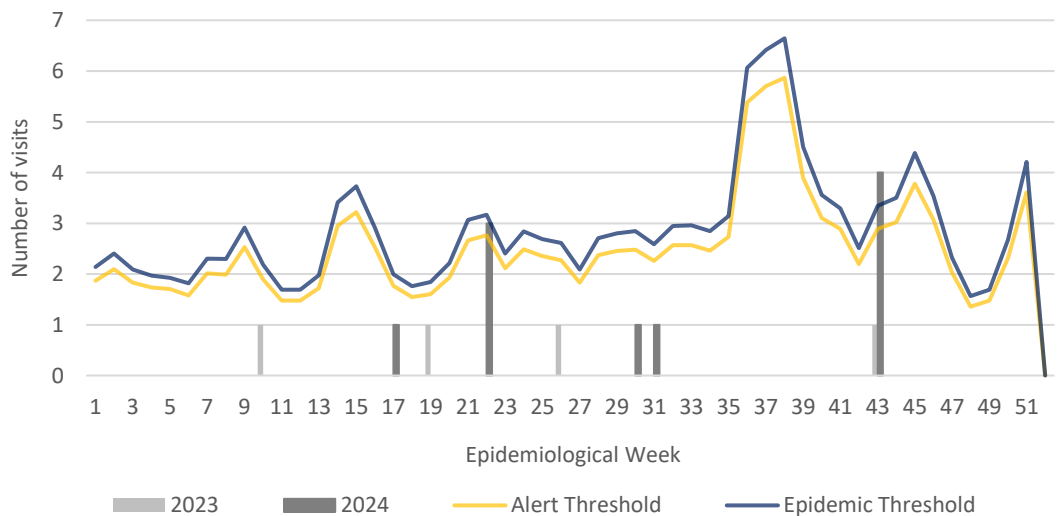
FEVER AND JAUNDICE

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 2023 and 2024



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

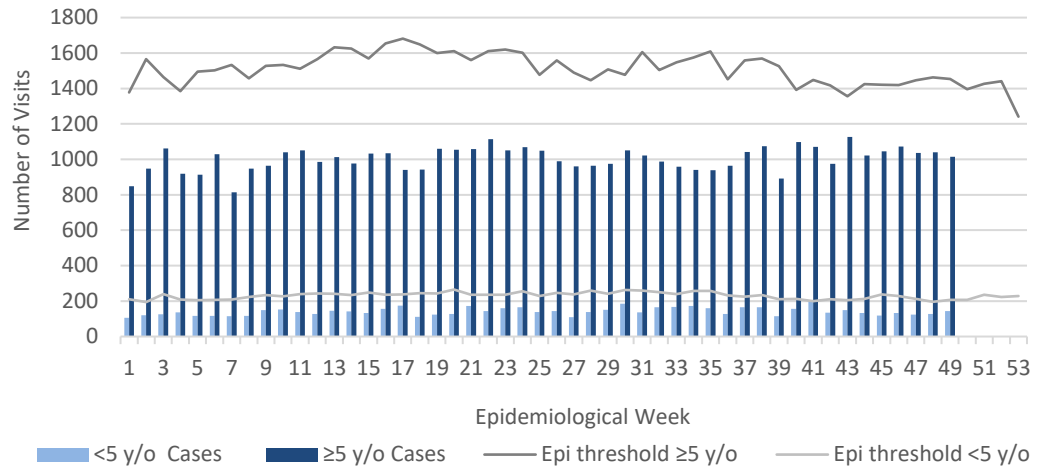


ACCIDENTS

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



Weekly Visits to Sentinel Sites for Accident by Age Group 2024 vs. Weekly Threshold

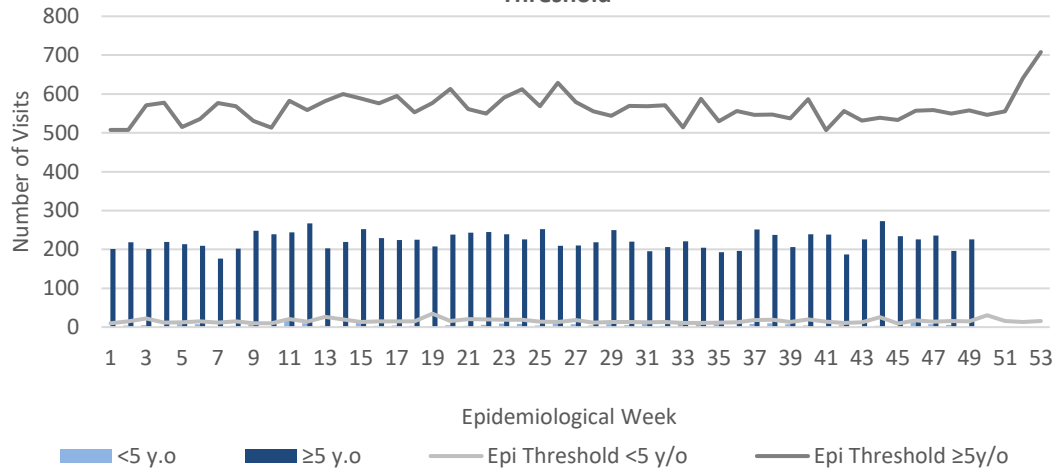


VIOLENCE

Any injury for which the cause is intentional, e.g. gunshot wounds, stab wounds, etc.



Weekly Visits to Sentinel Sites for Violence by Age Groups 2024 vs. Weekly Threshold

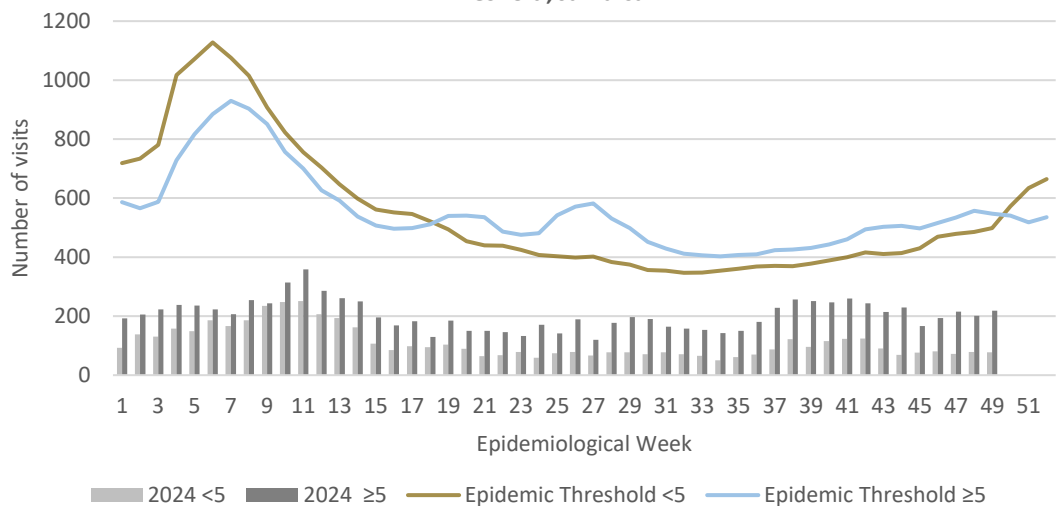


GASTROENTERITIS

Inflammation of the stomach and intestines, typically resulting from bacterial toxins or viral infection and causing vomiting and diarrhoea.



Weekly visits to Sentinel Sites for Gastroenteritis All ages 2024 vs Weekly Threshold; Jamaica



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 2024	PREVIOUS YEAR 2023		
NATIONAL /INTERNATIONAL INTEREST	Accidental Poisoning	232 ^β	374 ^β	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.	
	Cholera	0	0		
	Severe Dengue ^γ	See Dengue page below	See Dengue page below		
	COVID-19 (SARS-CoV-2)	699	3818		
	Hansen’s Disease (Leprosy)	0	0		
	Hepatitis B	27	62		
	Hepatitis C	3	30		
	HIV/AIDS	NA	NA		
	Malaria (Imported)	3	3		
	Meningitis	14	27		
	Monkeypox	0	3		
EXOTIC/ UNUSUAL	Plague	0	0	^ε CHIKV IgM positive cases ^θ Zika PCR positive cases ^β Updates made to prior weeks. ^α Figures are cumulative totals for all epidemiological weeks year to date.	
HIGH MORBIDITY/ MORTALITY	Meningococcal Meningitis	0	0		
	Neonatal Tetanus	0	0		
	Typhoid Fever	0	0		
	Meningitis H/Flu	1	2		
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	65	55		
	Ophthalmia Neonatorum	177	162		
	Pertussis-like syndrome	0	0		
	Rheumatic Fever	0	0		
	Tetanus	0	0		
	Tuberculosis	33	66		
Yellow Fever	0	0			
Chikungunya ^ε	0	0			
Zika Virus ^θ	0	0	NA- Not Available		



5 NOTIFICATIONS-
All clinical sites



INVESTIGATION REPORTS- Detailed Follow up for all Class One Events



HOSPITAL ACTIVE SURVEILLANCE- 30 sites. Actively pursued

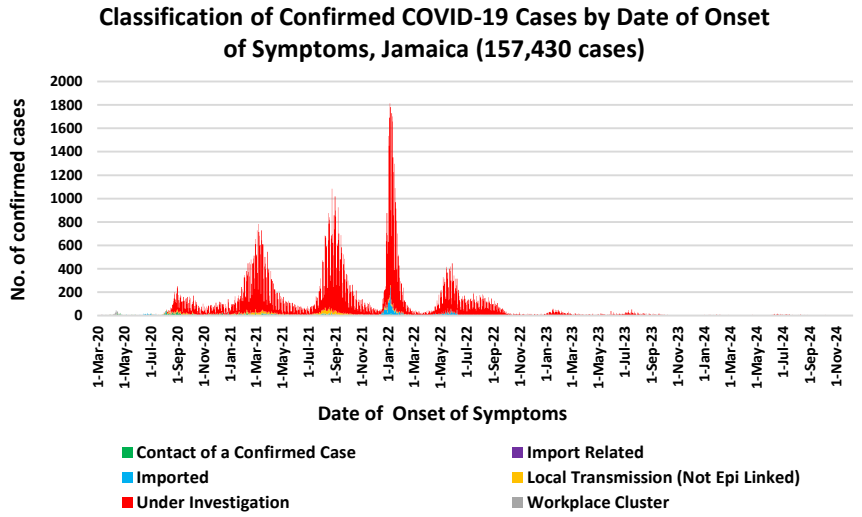


SENTINEL REPORT- 78 sites. Automatic reporting

COVID-19 Surveillance Update

CASES	EW 49	Total
Confirmed	3	157430
Females	2	90708
Males	1	66719
Age Range	3 to 62 years old	1 day to 108 years

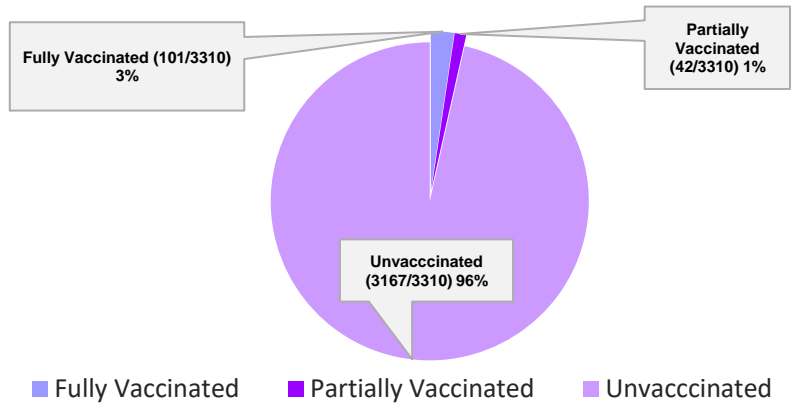
* 3 positive cases had no gender specification
 * PCR or Antigen tests are used to confirm cases
 * Total represents all cases confirmed from 10 Mar 2020 to the current Epi-Week.



COVID-19 Outcomes

Outcomes	EW 49	Total
ACTIVE *2 weeks*		6
DIED – COVID Related	0	3874
Died - NON COVID	0	394
Died - Under Investigation	0	143
Recovered and discharged	0	103226
Repatriated	0	93
Total		157430

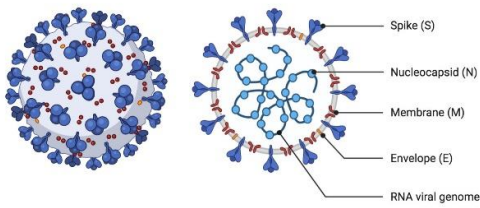
3310 COVID-19 Related Deaths since March 1, 2021 – YTD Vaccination Status among COVID-19 Deaths



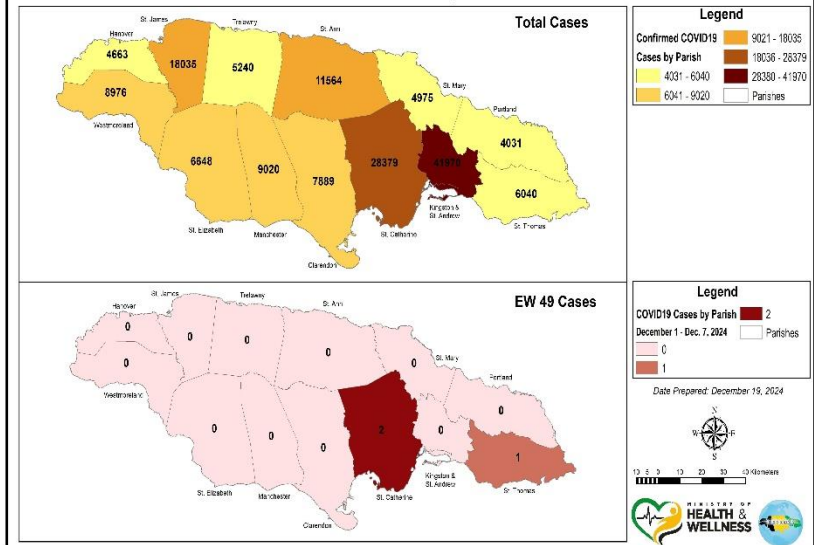
COVID-19 Parish Distribution and Global Statistics

COVID-19 Virus Structure

SARS-CoV-2



COVID-19 Cases by Parish



COVID-19 WHO Global Statistics EW 46-49, 2024

Epi Week	Confirmed Cases	Deaths
46	43 500	723
47	44 300	688
48	47 400	565
49	47 200	521
Total (4weeks)	182400	2497

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

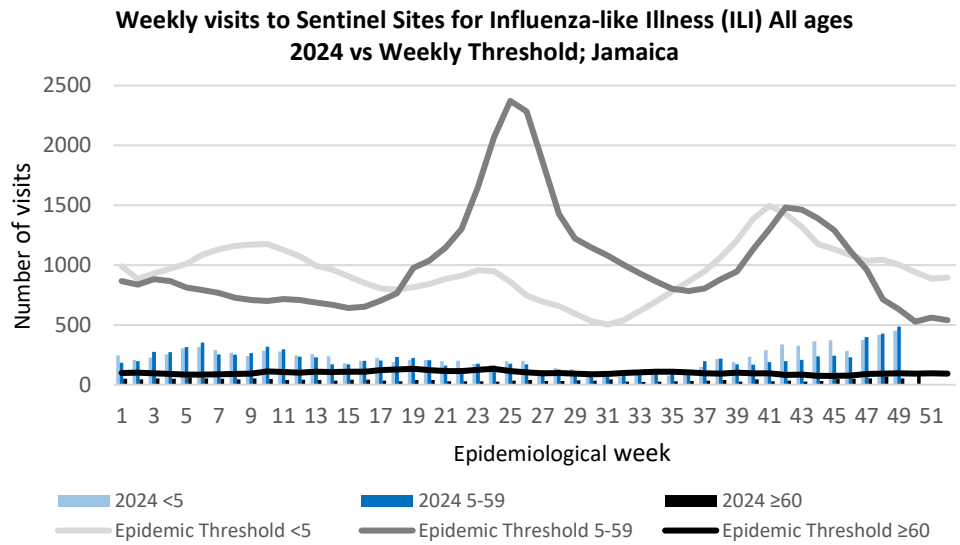


NATIONAL SURVEILLANCE UNIT INFLUENZA REPORT

EW 49

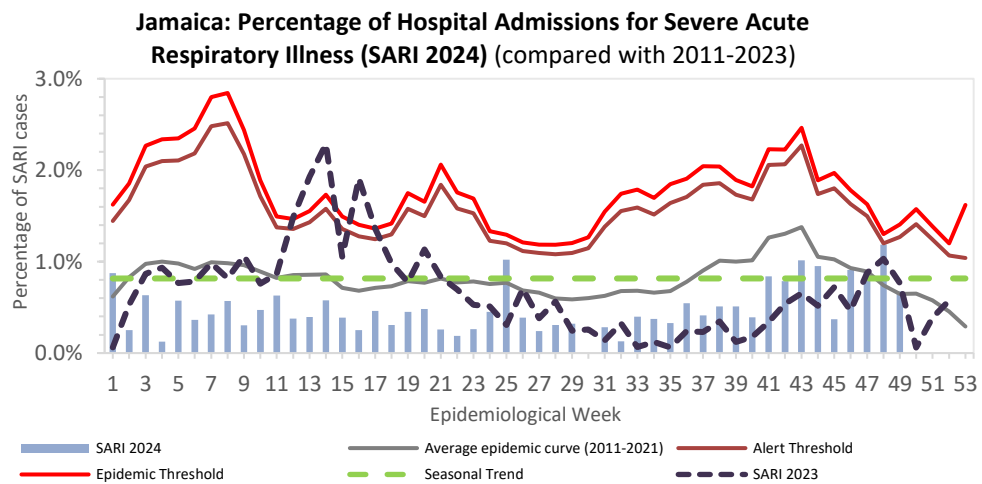
December 1, 2024 – December 7, 2024 Epidemiological Week 49

	EW 49	YTD
SARI cases	12	381
Total Influenza positive Samples	4	219
Influenza A	4	214
H3N2	3	46
H1N1pdm09	1	168
Not subtyped	0	0
Influenza B	0	5
B lineage not determined	0	0
B Victoria	0	5
Parainfluenza	0	0
Adenovirus	0	0
RSV	2	168



Epi Week Summary

During EW 49, twelve (12) SARI admissions were reported.



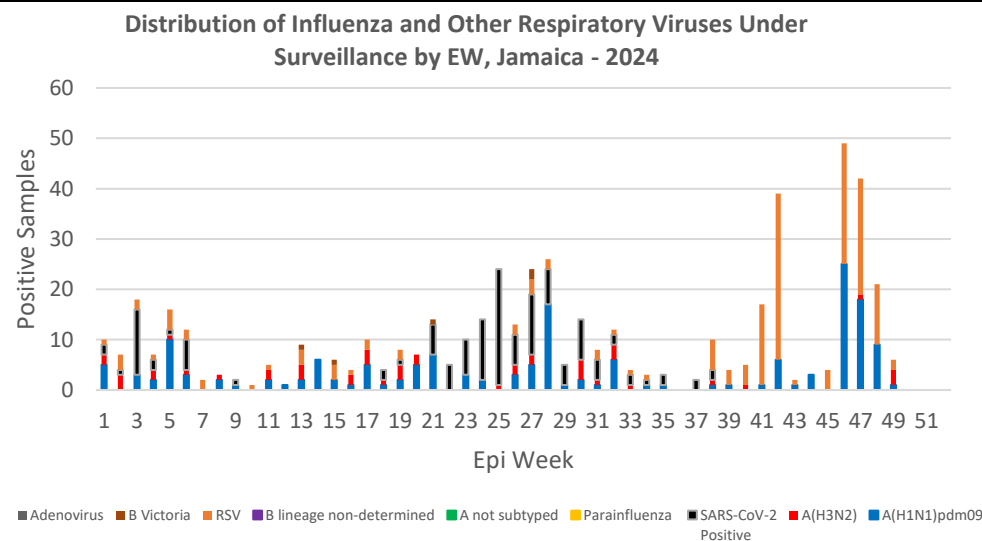
Caribbean Update EW 49

Caribbean: ILI cases have shown a slight increase, associated with RSV-positive cases. SARI cases remain low. Influenza activity has increased, with activity reported in several countries in the subregion, predominantly A(H1N1)pdm09. RSV activity remains elevated but has shown a slight decrease in the recent EW. In contrast, SARS-CoV-2 activity, after rising in prior weeks, has returned to low levels.

By country: In the past four EWs, influenza activity has been reported in Barbados, St. Lucia, Jamaica and the Cayman Islands. RSV activity has been detected in Belize, the Dominican Republic, Jamaica, Barbados, the Cayman Islands, Guyana, and Saint Vincent and the Grenadines.

In Jamaica, SARI cases are at epidemic levels, and pneumonia cases are at extraordinarily level. Over the past four EWs, influenza activity has risen above the epidemic threshold, alongside increased RSV activity.

(taken from PAHO Respiratory viruses weekly report) <https://www.paho.org/en/influenza-situation-report>



7 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

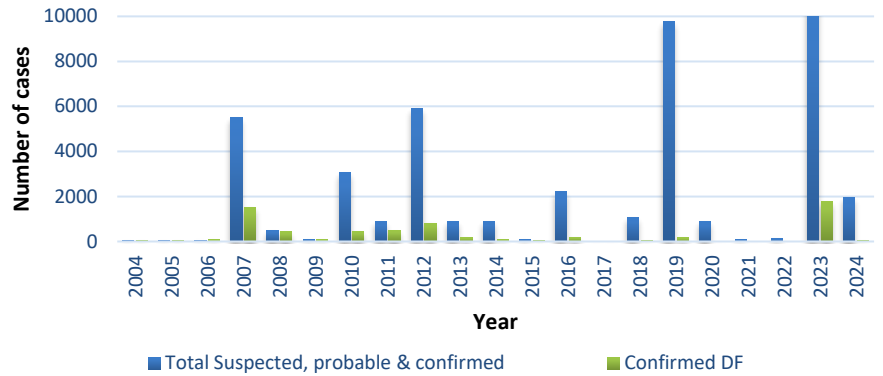
Dengue Bulletin

December 1, 2024 – December 7, 2024 Epidemiological Week 49


Epidemiological Week 49



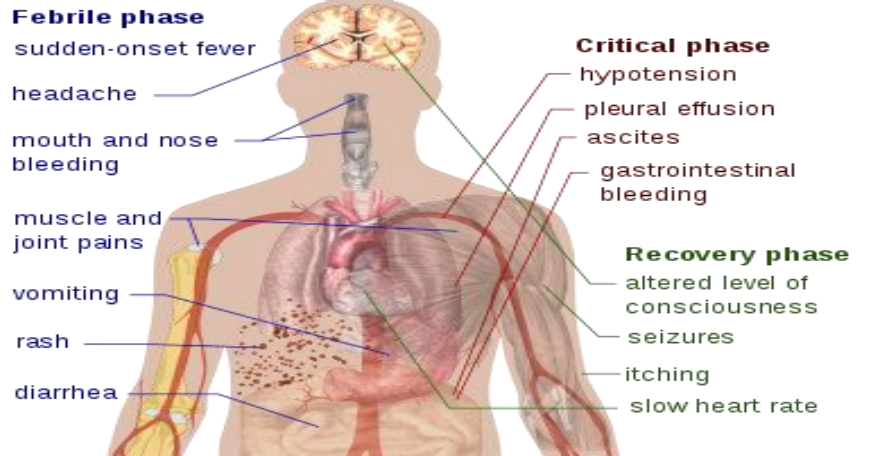
Dengue Cases by Year: 2004-2024, Jamaica



Reported suspected, probable and confirmed dengue with symptom onset in week 49 of 2024

	2024*	
	EW 49	YTD
 Total Suspected, Probable & Confirmed Dengue Cases	3	1961
Lab Confirmed Dengue cases	0	43
CONFIRMED Dengue Related Deaths	0	2

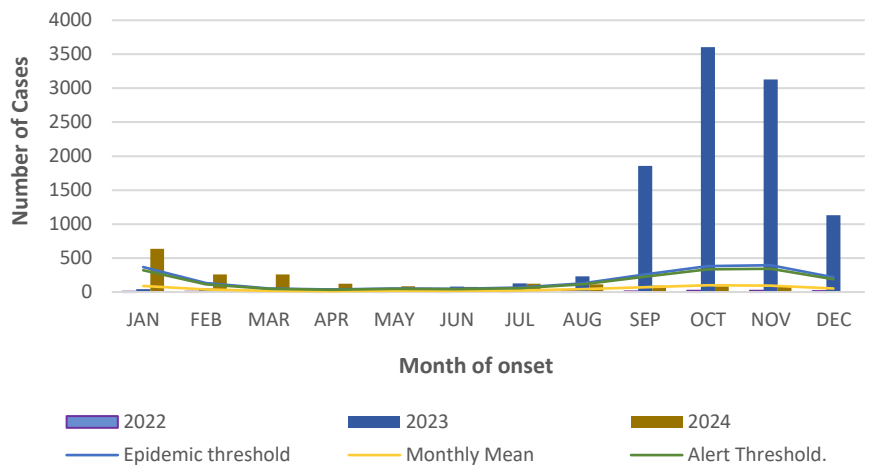
Symptoms of Dengue fever



Points to note:

- Dengue deaths are reported based on date of death.
- *Figure as at December 19, 2024
- Only PCR positive dengue cases are reported as confirmed.
- IgM positive cases are classified as presumed dengue.

Suspected, probable and confirmed dengue cases for 2022 - 2024 versus monthly mean, alert, and epidemic thresholds (2007-2022)



8 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



RESEARCH PAPER

Abstract

NHRC-23-P08

Applying the Ecological Systems Theory to Understand Sexual Risk-Taking Behaviours among High School Adolescent Girls residing in Single Parent Households in Jamaica

Facey A¹

¹The University of the West Indies, Mona, Jamaica

Objectives: The research aimed to determine the sexual behaviours and practices and other associated risk behaviours among high school female adolescents 15-19 years of age residing in households with their mothers only, and the impact of multisystem factors that contribute to their engagement in risky sexual behaviours.

Methods: The study employed a cross-sectional quantitative survey approach. The sample was selected using a multi-stage random sampling technique and the mode of data collection was self-administered questionnaires. Structural Equation Modelling was performed to assess the impact of multisystem factors that individually and collectively contribute to their engagement in risky sexual behaviours.

Results: The average age of the participants was 16 years. The participants engaged in several sexual behaviours and other associated risk behaviours. Approximately 47% were sexually active. Among those who were sexually active, the majority had their first sexual encounter before the age of consent (16 years of age). The results of the Structural Equation Modelling (SEM) analysis revealed that multiple factors within the microsystem influence adolescents' engagement in risky sexual behaviours. Self-related factors were found to be the strongest predictors of adolescent girls' engagement in risky sexual behaviours. Maternal relationship and peer factors were the extra-individual factors that were significant predictors, with peer factors being more influential than the relationships shared with their mothers/female guardians.

Conclusion: To effectively develop multidimensional intervention and prevention programmes geared towards reducing female adolescents' engagement in risky sexual behaviours, a multi-system approach should be employed.



The Ministry of Health and Wellness
15 Knutsford Boulevard, Kingston 5, Jamaica
Tele: (876) 633-7924
Email: surveillance@moh.gov.jm



9 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