WEEKLY EPIDEMIOLOGY BULLETIN

NATIONAL SURVEILLANCE UNIT, MINISTRY OF HEALTH & WELLNESS, JAMAICA

Weekly Spotlight

Neglected Tropical Diseases

Neglected tropical diseases (NTDs) are a diverse group of conditions[1] caused by a variety of pathogens (including viruses, bacteria, parasites, fungi and toxins) and associated with devastating health, social and economic consequences. NTDs are mainly prevalent among impoverished communities in tropical areas, although some have a much larger geographical distribution. It is estimated that NTDs affect more than 1 billion people, while the number of people requiring NTD interventions (both preventive and curative) is 1.6 billion.

The epidemiology of NTDs is complex and often related to environmental conditions. Many of them are vector-borne, have animal reservoirs and are associated with complex life cycles. All these factors make their public-health control challenging. WHO estimates that over 1.6 billion of the world's population should be targeted by prevention and treatment activities for at least one of these diseases, every year.

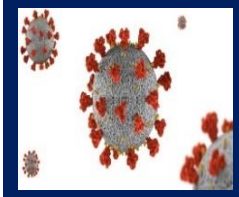
In addition to significant mortality and morbidity - approximately 200,000 deaths and 19 million disability adjusted life years (DALYs) lost annually, NTDs cost developing communities the equivalent of billions of United States dollars each year in direct health costs, loss of productivity and reduced socioeconomic and educational attainment. They are also responsible for other consequences such as disability, stigmatization, social exclusion and discrimination and place considerable financial strain on patients and their families.

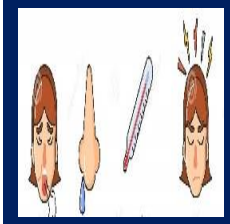
In spite of this, NTDs have historically ranked very low and almost absent from the global health policy agenda – only to gain recognition in 2015 with the Sustainable Development Goals (SDG target 3.3). SDG3 can therefore be achieved only if the NTD goals are met but, because interventions to tackle NTDs are widely cross-sectoral, increasing their global prioritization can in fact catalyze progress to achieve all SDGs.

1. NTDs include: Buruli ulcer; Chagas disease; dengue and chikungunya; dracunculiasis; echinococcosis; foodborne trematodiases; human African trypanosomiasis; leishmaniasis; leprosy; lymphatic filariasis; mycetoma, chromoblastomycosis and other deep mycoses; noma; onchocerciasis; rabies; scabies and other ectoparasitoses; schistosomiasis; soil-transmitted helminthiases; snakebite envenoming; taeniasis/cysticercosis; trachoma; and yaws.

Taken from WHO website on 21/ July/2024
https://www.who.int/health-topics/neglected-tropical-diseases#tab=tab_1
https://www.who.int/health-topics/neglected-tropical-diseases#tab=tab_2

EPI WEEK 29





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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.

Table showcasing the Timeliness of Weekly Sentinel Surveillance Parish Reports for the Four Most Recent Epidemiological Weeks – 26 to 29 of 2024

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

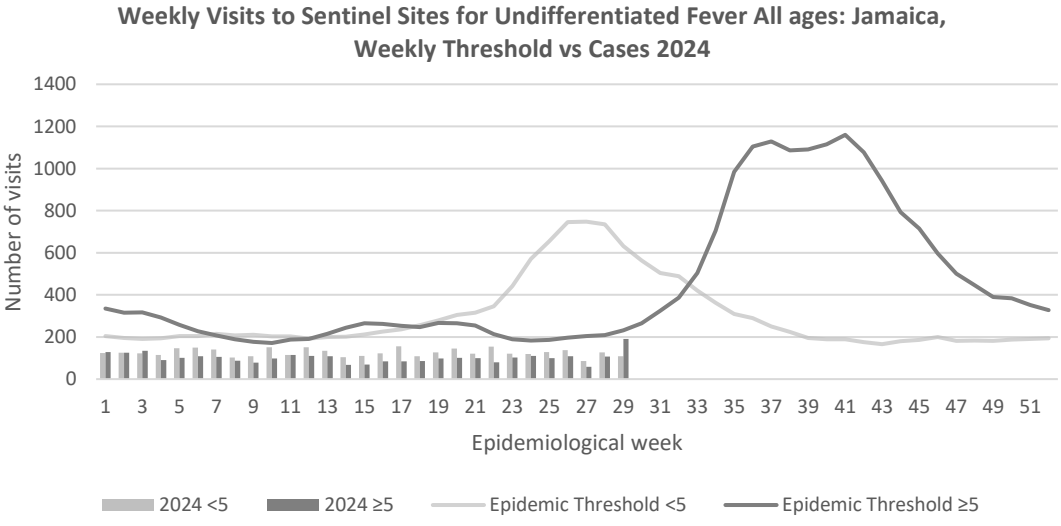
KEY:
Yellow- late submission on Tuesday
Red – late submission after Tuesday

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													
26	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
27	On Time	On Time	On Time	Late (W)	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time
28	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
29	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 >38^0C /100.4^0F (or recent history of fever) with or without an obvious diagnosis or focus of infection.



NOTIFICATIONS- All clinical sites

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HOSPITAL ACTIVE SURVEILLANCE- 30 sites. Actively pursued

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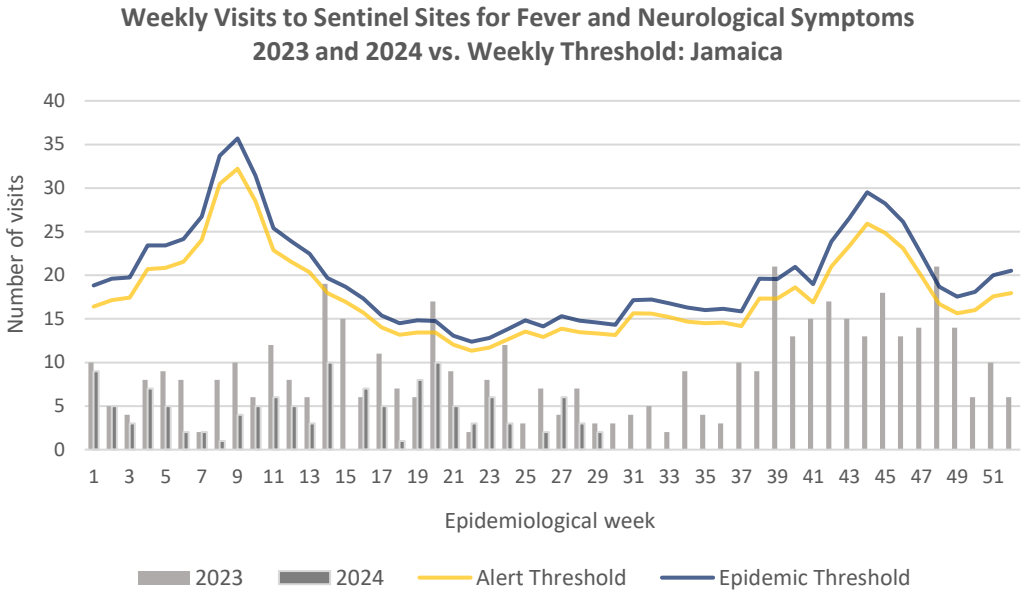
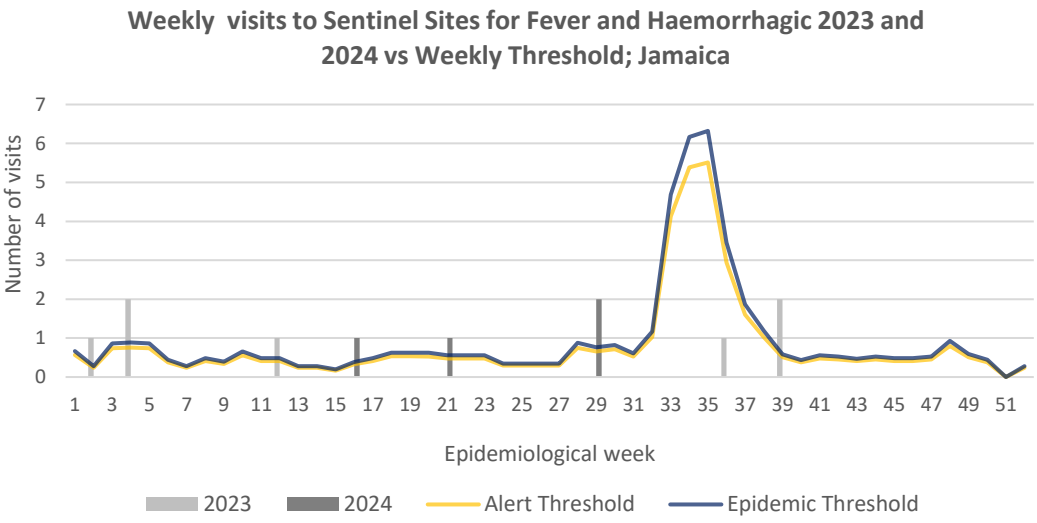
FEVER AND NEUROLOGICAL

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

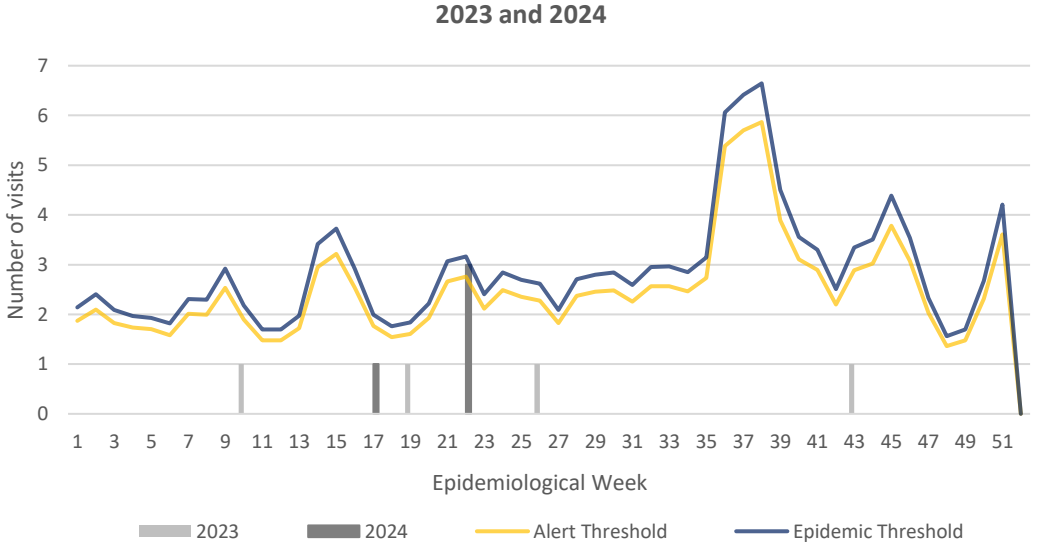
Temperature of >38^0C /100.4^0F (or recent history of fever) in a previously healthy person presenting with at least one haemorrhagic (bleeding) manifestation with or without jaundice.



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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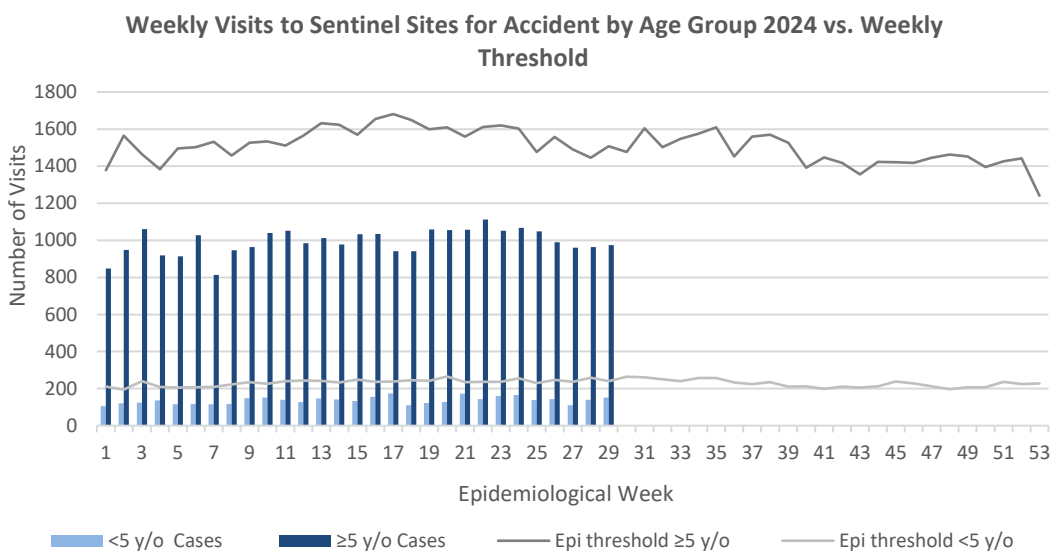
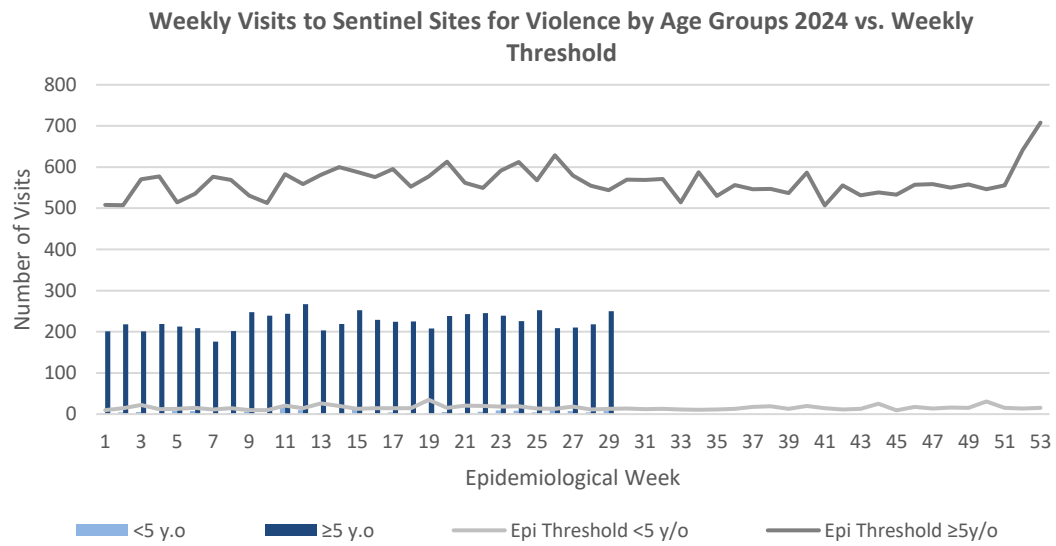
ACCIDENTS

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



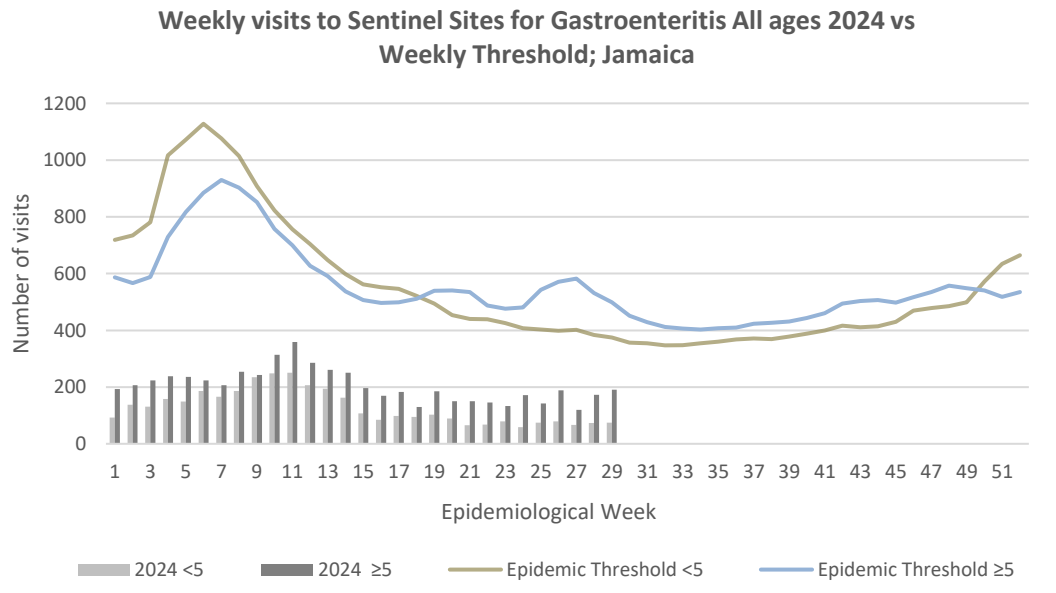
VIOLENCE

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 2024	PREVIOUS YEAR 2023
NATIONAL /INTERNATIONAL INTEREST	Accidental Poisoning		202[β]	215[β]
	Cholera		0	0
	Severe Dengue[γ]		See Dengue page below	See Dengue page below
	COVID-19 (SARS-CoV-2)		502	3042
	Hansen's Disease (Leprosy)		0	0
	Hepatitis B		10	42
	Hepatitis C		1	21
	HIV/AIDS		NA	NA
	Malaria (Imported)		0	0
	Meningitis		9	17
	Monkeypox		0	3
EXOTIC/ UNUSUAL	Plague		0	0
H IGH 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]		36	30
	Ophthalmia Neonatorum		72	84
	Pertussis-like syndrome		0	0
	Rheumatic Fever		0	0
	Tetanus		0	0
	Tuberculosis		17	39
	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.

[α] Figures are cumulative totals for all epidemiological weeks year to date.

NA- Not Available

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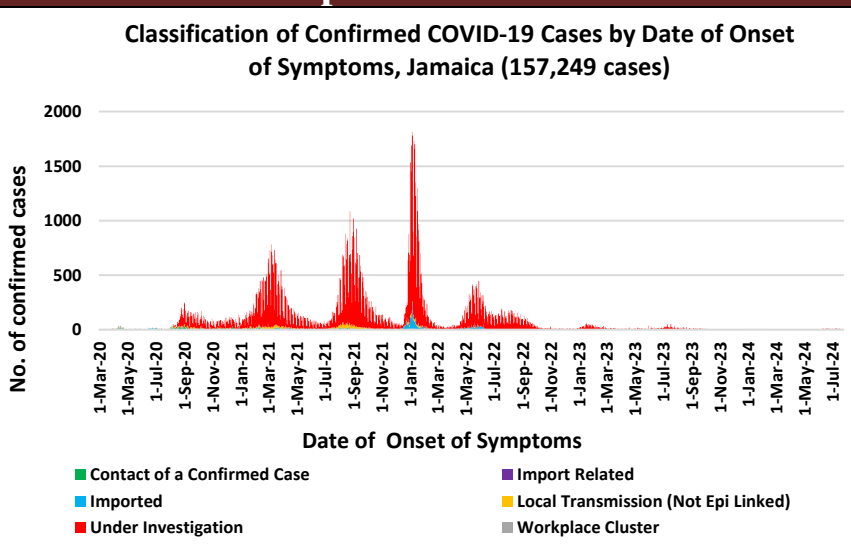
COVID-19 Surveillance Update

CASES	EW 29	Total
Confirmed	52	157249
Females	34	90620
Males	18	66626
Age Range	1 day to 95 years old	1 day to 108 years

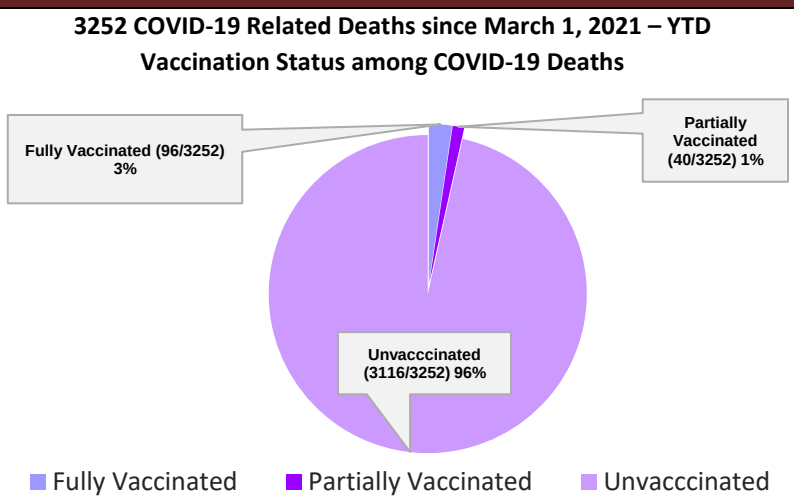
* 3 positive cases had no gender specification
* PCR or Antigen tests are used to confirm cases
* Total represents all cases confirmed from 10 Mar 2020 to the current Epi-Week.



COVID-19 Outcomes

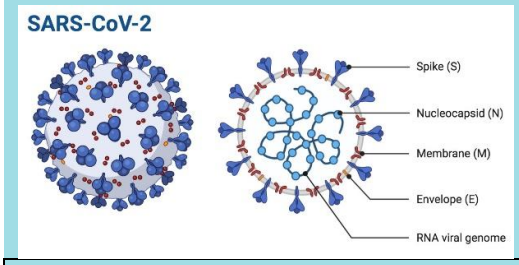
Outcomes	EW 29	Total
ACTIVE *2 weeks*		105
DIED – COVID Related	0	3814
Died - NON COVID	0	372
Died - Under Investigation	0	195
Recovered and discharged	0	103226
Repatriated	0	93
Total		157249

*Vaccination programme March 2021 – YTD
* Total as at current Epi week



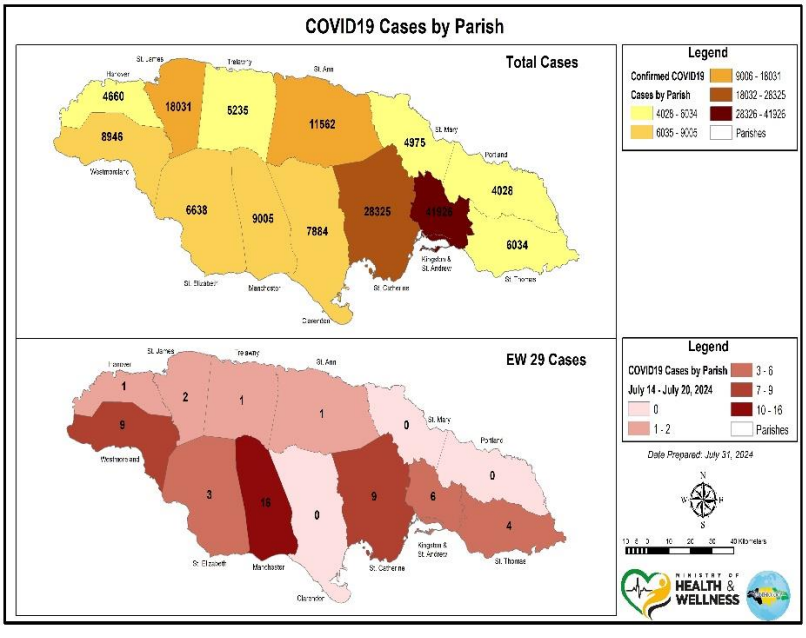
COVID-19 Parish Distribution and Global Statistics

COVID-19 Virus Structure



COVID-19 WHO Global Statistics EW 26-29, 2024

Epi Week	Confirmed Cases	Deaths
26	31500	646
27	45400	588
28	34700	600
29	34000	566
Total (4weeks)	**145600**	**2400**



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August 02, 2024 ISSN 0799-3927

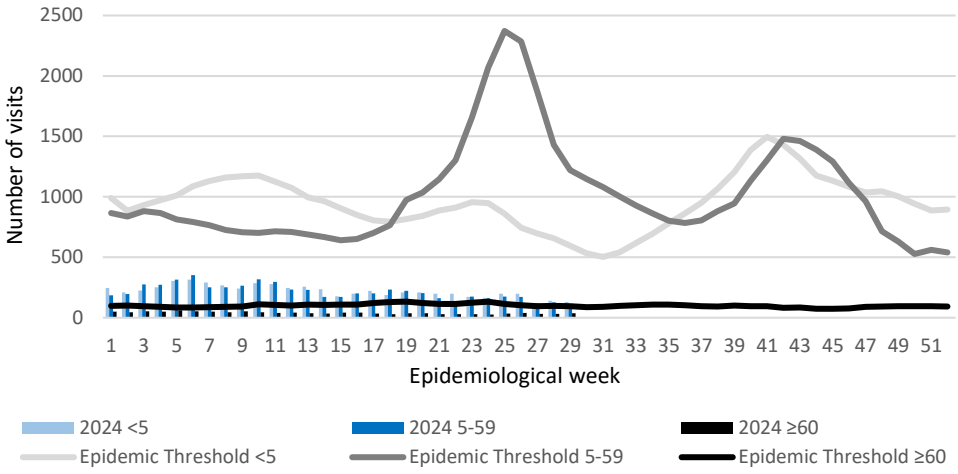
NATIONAL SURVEILLANCE UNIT INFLUENZA REPORT

EW 29

July 14, 2024 – July 20, 2024 Epidemiological Week 29

	EW 29	*YTD*
SARI cases	5	194
Total Influenza positive Samples	**0**	**103**
Influenza A	**0**	**98**
H3N2	0	29
H1N1pdm09	0	69
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	0	29

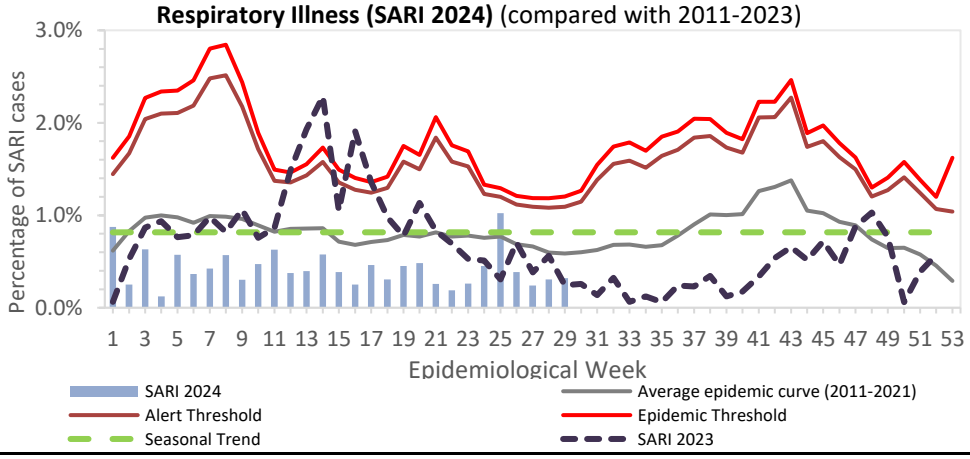
Weekly visits to Sentinel Sites for Influenza-like Illness (ILI) All ages 2024 vs Weekly Threshold; Jamaica



Epi Week Summary

During EW 29, five (5) SARI admissions were reported.

Jamaica: Percentage of Hospital Admissions for Severe Acute Respiratory Illness (SARI 2024) (compared with 2011-2023)



Caribbean Update EW 29

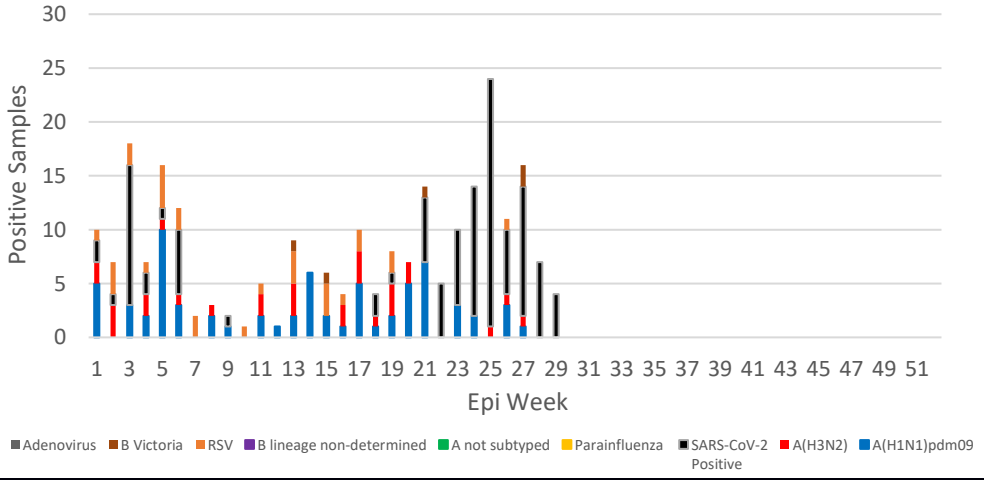
Caribbean: In the last four EWs, ILI cases have increased, accompanied by a higher proportion of positive SARS-CoV-2 and influenza cases. While SARI cases have remained low, an uptick in positive SARS-CoV-2 and Influenza cases has been noted. Influenza activity has stayed at intermediate levels during the last four EWs, with a predominance of A(H3N2) and to a lesser extent influenza A(H1N1)pdm09. RSV activity has remained low, while SARS-CoV-2 activity continues to be elevated.

By country: In the last four EWs, influenza activity has been reported in the Dominican Republic, Jamaica, the Cayman Islands, and Guyana.

SARS –CoV-2 activity was been detected in Belize, the Dominacan Republic, Jamaica, Saint Lucia, Suriname, Barbados, Guyana, the Cayman Islands and Saint Vincent and the Grenadines.

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

Distribution of Influenza and Other Respiratory Viruses Under Surveillance by EW, Jamaica - 2024



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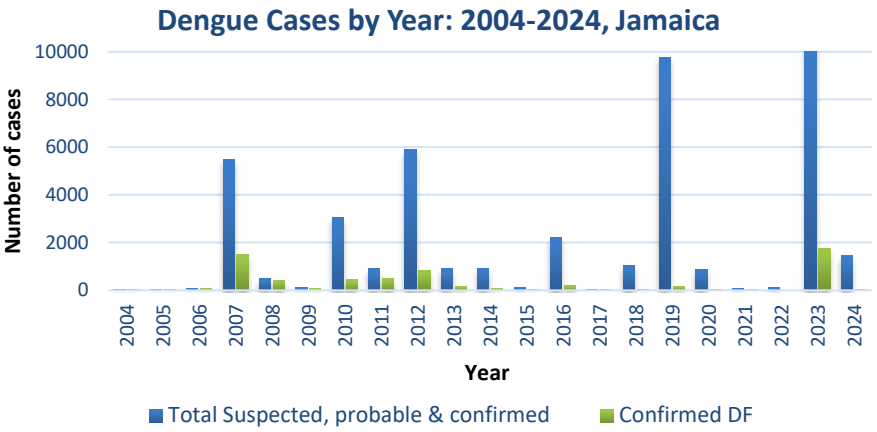
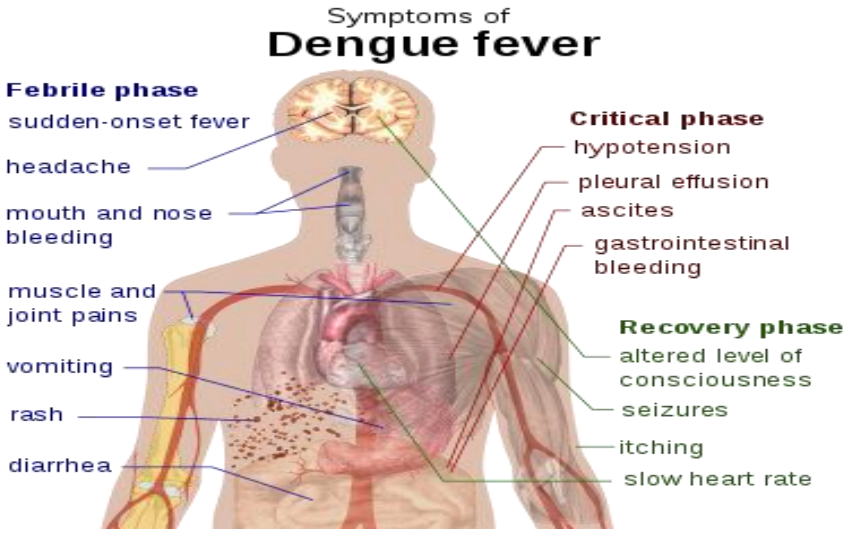
Dengue Bulletin

July 14, 2024 – July 20, 2024 Epidemiological Week 29 | Epidemiological Week 29



Reported suspected, probable and confirmed dengue with symptom onset in week 29 of 2024

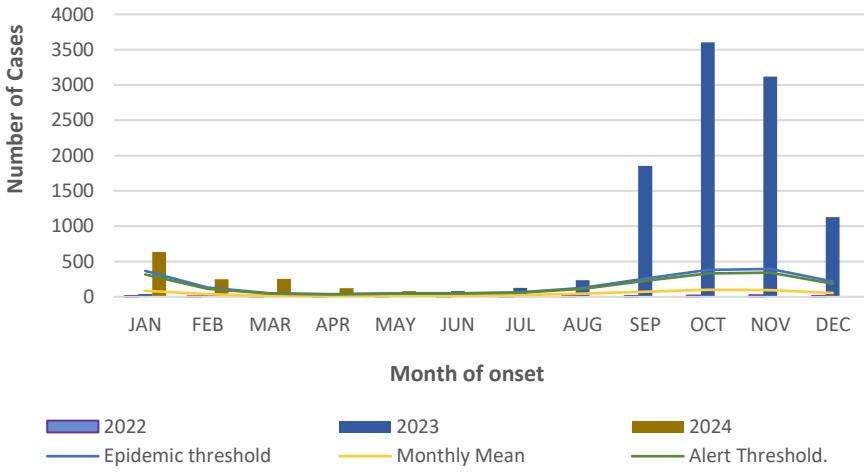
	2024*	
	EW 29	YTD
Total Suspected, Probable & Confirmed Dengue Cases	1	1451
Lab Confirmed Dengue cases	0	5
CONFIRMED Dengue Related Deaths	0	0



Points to note:

- **Dengue deaths are reported based on date of death.**
- ***Figure as at July 30, 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)



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RESEARCH PAPER

Abstract

NHRC-23-O09

Combined supplementation of S-nitrosoglutathione and glutathione improves glycaemic control in type 2 diabetic rats

Wright, A[1], Bryan, S.[1]

[1]*The University of the West Indies, Mona, Jamaica*

Objectives: To investigate the effect of the combined supplementation of S-nitrosoglutathione and glutathione on blood glucose concentration in type 2 diabetic rats.

Methods: A type 2 diabetic animal model was developed over 4 weeks using 10% fructose solution and low-dose streptozotocin (40 mg/kg BW). Thirty Sprague-Dawley rats were separated equally into five treatment groups, namely, normal control (NC), diabetic control (DC), S-nitrosoglutathione (GSNO), glutathione (GSH) and S-nitrosoglutathione combined with glutathione (GSNO + GSH). The compounds were administered orally (once daily) for 4 weeks, and weekly non-fasting blood glucose concentration was obtained throughout the study. Plasma insulin concentration, in addition to food and fluid intake were also determined at the end of treatment. Data was collected and statistical analysis was done using One-way ANOVA with Tukey post-hoc test and a p-value < 0.05 was considered statistically significant.

Results: A successful non-genetic animal model of type 2 diabetes was developed. There was a notable reduction in the non-fasting blood glucose concentration following supplementation with GSH only which was even more pronounced with GSNO + GSH treatment ($p < 0.05$) over the 4 weeks. A concomitant marked increase in insulin concentration for both treatment groups was observed ($p < 0.05$). The significant decrease in the non-fasting blood glucose concentration was accompanied by a decrease in food and fluid intake for both groups.

Conclusion: Combined supplementation of S-nitrosoglutathione and glutathione improved glycaemic control possibly through an insulin-dependent mechanism and decreased symptoms of polyphagia and polydipsia in type 2 diabetic rats. This combined supplementation could potentially be a new treatment strategy for managing type 2 diabetes mellitus.

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