## WEEKLY EPIDEMIOLOGY BULLETIN NATIONAL EPIDEMIOLOGY UNIT, MINISTRY OF HEALTH & WELLNESS, JAMAICA

## Typhoid

**Overveiw:** 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: prolonged high fever, fatigue, headache, nausea, abdominal pain, constipation or diarrhoea, 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.



https://www.who.int/health-topics/typhoid#tab=tab\_1



### Released August 21, 2020

SENTINEL SYNDROMIC SURVEILLANCE Sentinel Surveillance in





Map representing the **Timeliness of Weekly Sentinel Surveillance Parish Reports for the Four Most Recent Epidemiological Weeks -**29 to 32 of 2020

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

sites

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.



SURVEILLANCE-

30 sites. Actively pursued

Automatic reporting

## **REPORTS FOR SYNDROMIC SURVEILLANCE**

#### **FEVER** Weekly Visits to Sentinel Sites for Undifferentiated Fever All ages: Jamaica, Temperature of >38°C Weekly Threshold vs Cases 2020 /100.4°F (or recent history of 1400 fever) with or without an 1200 obvious diagnosis or focus of Number of visits 1000 infection. 800 600 400 200 KEY at a maximal diffe 0 VARIATIONS OF **BLUE** 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 3 5 7 1 SHOW CURRENT WEEK **Epidemiologic week** 2020 <5 2020 ≥5 Epidemic Threshold <5 Epidemic Threshold >=5 NOTIFICATIONS-HOSPITAL SENTINEL **INVESTIGATION** All clinical **REPORTS-** Detailed Follow ACTIVE REPORT- 78 sites.

up for all Class One Events

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## FEVER AND NEUROLOGICAL

Temperature of >38°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).



### FEVER AND HAEMORRHAGIC

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



## **FEVER AND JAUNDICE**

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





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NOTIFICATIONS-All clinical sites



INVESTIGATION REPORTS- Detailed Follow up for all Class One Events



HOSPITAL ACTIVE SURVEILLANCE-30 sites. Actively pursued





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## CLASS ONE NOTIFIABLE EVENTS

## Comments

	CLASS 1 EVENTS		Confirmed YTD		AFP Field Guides
			CURRENT YEAR 2020	PREVIOUS YEAR 2019	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.
NATIONAL /INTERNATIONAL INTEREST	Accidental Poisoning		5	29	
	Cholera		0	0	
	Dengue Hemorrhagic Fever*		NA	NA	
	Hansen's Disease (Leprosy)		0	0	
	Hepatitis B		0	11	
	Hepatitis C		0	2	Pertussis-like syndrome and Tetanus are clinically confirmed classifications.
	HIV/AIDS		NA	NA	
	Malaria (Imported)		0	0	
	Meningitis (Clinically confirmed)		1	15	
EXOTIC/ UNUSUAL	Plague		0	0	<ul> <li>* Dengue</li> <li>* Hemorrhagic Fever data include Dengue related deaths;</li> <li>** Figures include all deaths associated with pregnancy reported for the period. * 2019 YTD figure was updated.</li> </ul>
H IGH MORBIDIT/ MORTALIY	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	positive cases
		Rubella	0	0	
	Maternal Deaths**		23	41	**** Zika PCR positive cases
	Ophthalmia Neonatorum		23	116	4
	Pertussis-like syndrome		0	0	-
	Rheumatic Fever		0	0	-
	Tetanus		0	0	
	Tuberculosis		6	30	
	Yellow Fever		0	0	
	Chikungunya <sup>***</sup>		0	0	
	Zika Virus <sup>****</sup>		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



## Released August 21, 2020

## NATIONAL SURVEILLANCE UNIT INFLUENZA REPORT

# *EW 32*

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5 NOTIFICATIONS-All clinical sites



INVESTIGATION REPORTS- Detailed Follow up for all Class One Events



ACTIVE SURVEILLANCE-30 sites. Actively pursued



## Dengue Bulletin

August 02, 2020-August 08, 2020 Epidemiological Week 32

Epidemiological Week 32







Suspected dengue cases for 2018 , 2019 and 2020 versus monthly mean, alert, and epidemic thresholds



#### **Points to note:**

- \*\* figure as at August 17, 2020
- Only PCR positive dengue cases are reported as confirmed.
- IgM positive cases are classified as presumed dengue.



NOTIFICATIONS-All clinical sites

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INVESTIGATION REPORTS- Detailed Follow up for all Class One Events HOSPITAL ACTIVE SURVEILLANCE-30 sites. Actively pursued



## **RESEARCH PAPER**

## Abstract

## The Efficacy of Citrus aurantifolia (Key Lime) as an inhibitory agent on selected bacteria, and fungi in Jamaica.

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The ability of microorganisms to develop resistance mechanisms to counter the inhibitory action of antimicrobial agents has resulted in declining treatment options, which culminates in increased treatment failures, deaths, higher healthcare cost, and loss of productivity. This is further compounded by the small number of novel antimicrobial agents being developed by pharmaceutical companies. Being cognizant of the need for new treatment options, this research is focused on determining the antimicrobial activity of Citrus aurantifolia (Key Lime) the specie of lime commonly found in Jamaica. This study aims to investigate the antimicrobial activity of Citrus aurantifolia (Key Lime) also known as lime fruit, Swingle, Mexican or West Indian lime, on selected bacteria, and fungi.

Citrus aurantifolia (Key Lime) juice was investigated using both disc diffusion and well diffusion methods for its inhibitory activity against the organisms, Staphylococcus aureus, Klebsiella pneumoniae, Corynebacterium specie, Pseudomonas aeruginosa, Candida albicans, Microsporum gypseum and Aspergillus niger. The minimal inhibitory concentration (MIC) was determined using a range of 1:1 - 1:32 dilutions of the lime juice.

Citrus aurantifola juice exhibited inhibitory activity against Staphylococcus aureus, Klebsiella pneumoniae, Corynebacterium specie, Pseudomonas aeruginosa, and Microsporum gypseum as they all recorded zones of inhibition. Staphylococcus aureus had the lowest of MIC value >1:32.

The findings have indicated that Citrus aurantifolia has both antibacterial and antifungal properties and will inhibit select bacteria and mould which are potentially pathogenic. The findings also suggest that Citrus aurantifolia has the potential to be utilized as an antimicrobial agent.



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All clinical sites



**INVESTIGATION REPORTS-** Detailed Follow up for all Class One Events



HOSPITAL ACTIVE SURVEILLANCE-30 sites. Actively pursued

