

WEEKLY EPIDEMIOLOGY BULLETIN

EPIDEMIOLOGY UNIT, MINISTRY OF HEALTH, JAMAICA

Weekly Spotlight

10 Facts on Antimicrobial Resistance (Part 1)

What is antimicrobial resistance?

Antimicrobial resistance is the ability of a microorganism (like bacteria, viruses, and some parasites) to stop an antimicrobial (such as antibiotics, antivirals and antimalarials) from working against it. As a result, standard treatments become ineffective, infections persist and may spread to others.



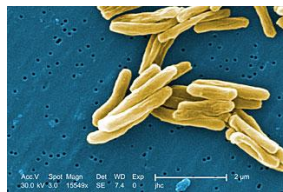
Drug resistance is a global problem

Over the past years, the use and misuse of antimicrobials has increased the number and types of resistant organisms. Consequently many infectious diseases may one day become uncontrollable. With the growth of global trade and travel, resistant microorganisms can spread promptly to any part of the world.



What causes drug resistance?

Drug resistance is a natural evolutionary phenomenon. When microorganisms are exposed to an antimicrobial, the more susceptible organisms succumb, leaving behind those resistant to the antimicrobial. They can then pass on their resistance to their offspring.



Inappropriate use of medicines worsens drug resistance

Inappropriate use of antimicrobials drives the development of drug resistance. Overuse, underuse and misuse of medicines contribute to the problem. Ensuring that patients are informed about the need to take the right dosage of the right antimicrobial requires action from prescribers, pharmacists and dispensers, pharmaceutical industry, the public and patients, as well as the policy makers.

Lack of quality medicines contributes to drug resistance




Most drug quality assurance systems are weak. This can lead to poor quality medicines, exposing patients to sub-optimal concentrations of antimicrobials, thus creating the conditions for drug resistance to develop. In some countries poor

access to antimicrobials forces patients to take incomplete courses of treatment or to seek alternatives that could include substandard medicines.

Adapted

who.int/features/factfiles/antimicrobial_resistance/facts/en/index4.html

 **NOTIFICATIONS-**
All clinical sites

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

 **HOSPITAL ACTIVE SURVEILLANCE-**30 sites*. Actively pursued

 **SENTINEL REPORT-** 79 sites*. Automatic reporting

*Incidence/Prevalence cannot be calculated

EPI WEEK 28



SYNDROMES

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CLASS 1 DISEASES

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INFLUENZA

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DENGUE FEVER

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GASTROENTERITIS

PAGE 9

from:

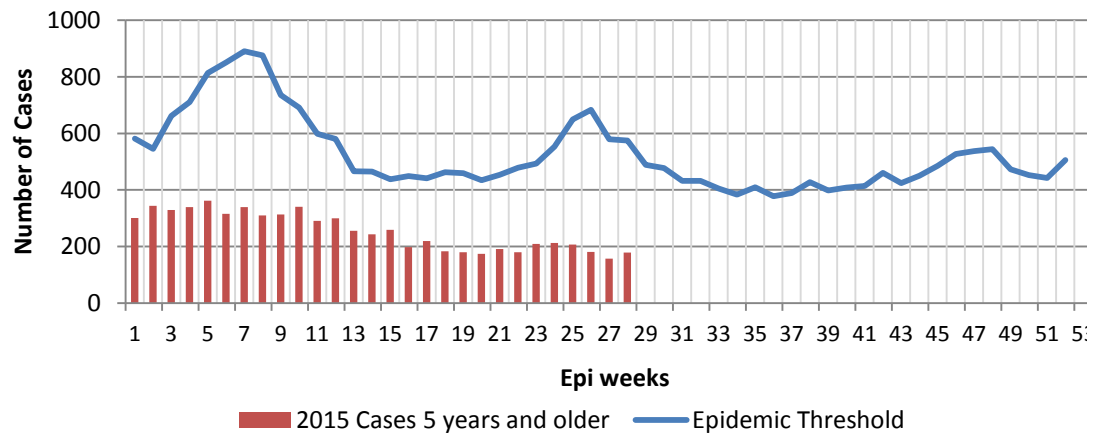
REPORTS FOR SYNDROMIC SURVEILLANCE

GASTROENTERITIS

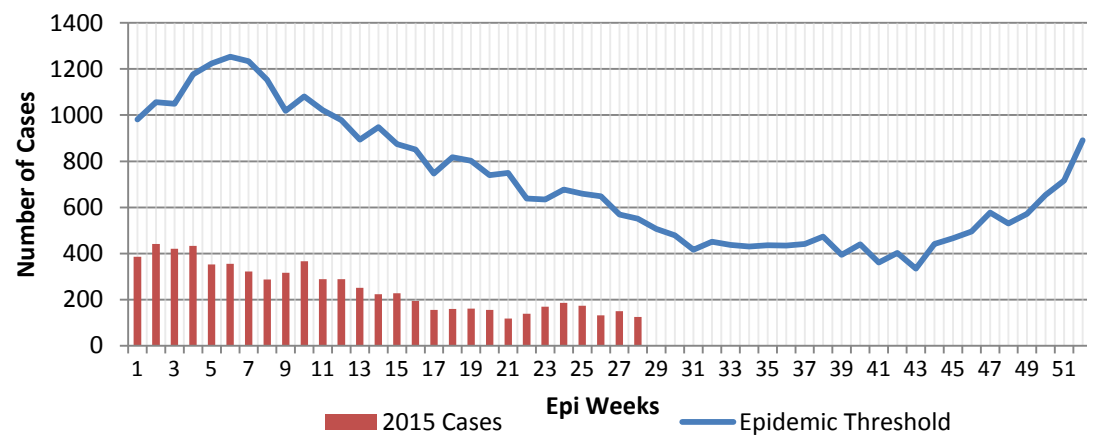
Three or more loose stools within 24 hours.



GE ≥5 Weekly Threshold vs Cases 2015, EW 1-28



GE <5 Weekly Threshold vs Cases 2015, EW 1-28

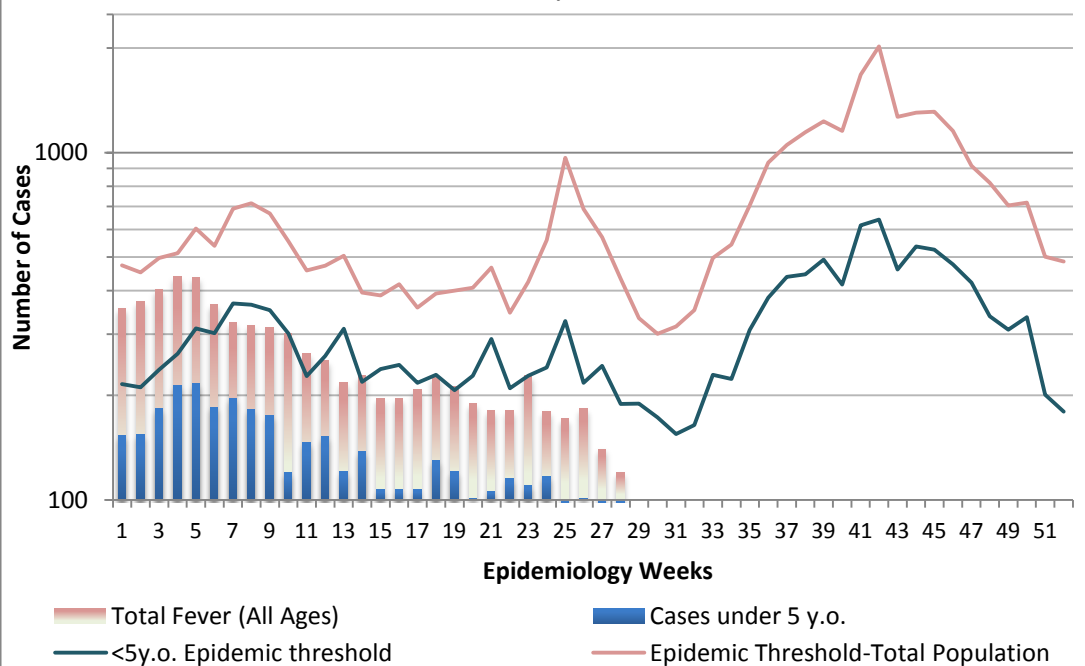


FEVER

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



Fever in under 5y.o. and Total Population 2015 vs Epidemic Thresholds, EW 1-28



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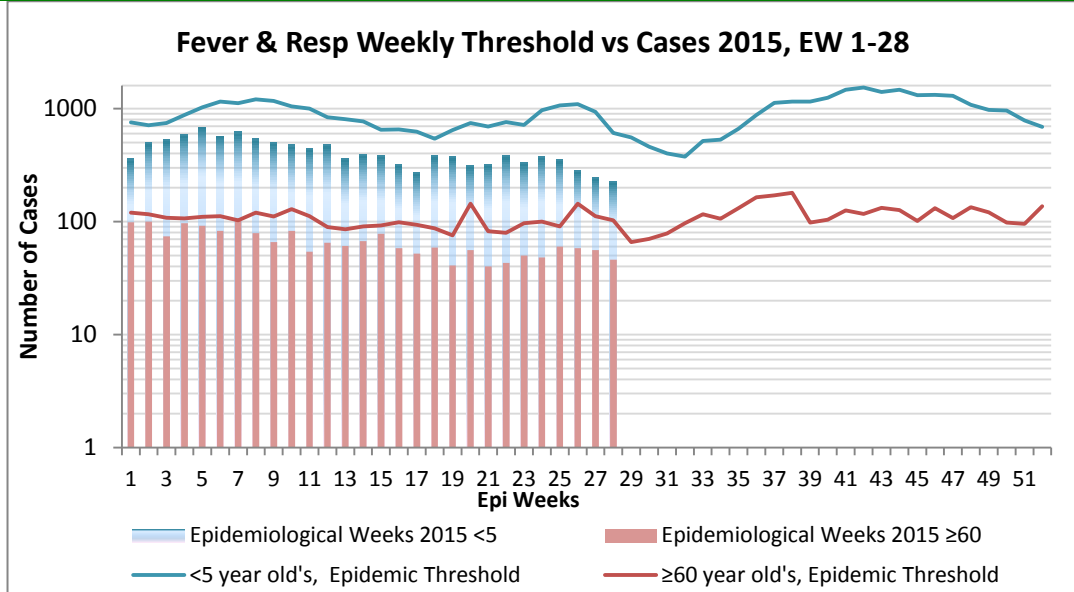
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REPORTS FOR SYNDROMIC SURVEILLANCE

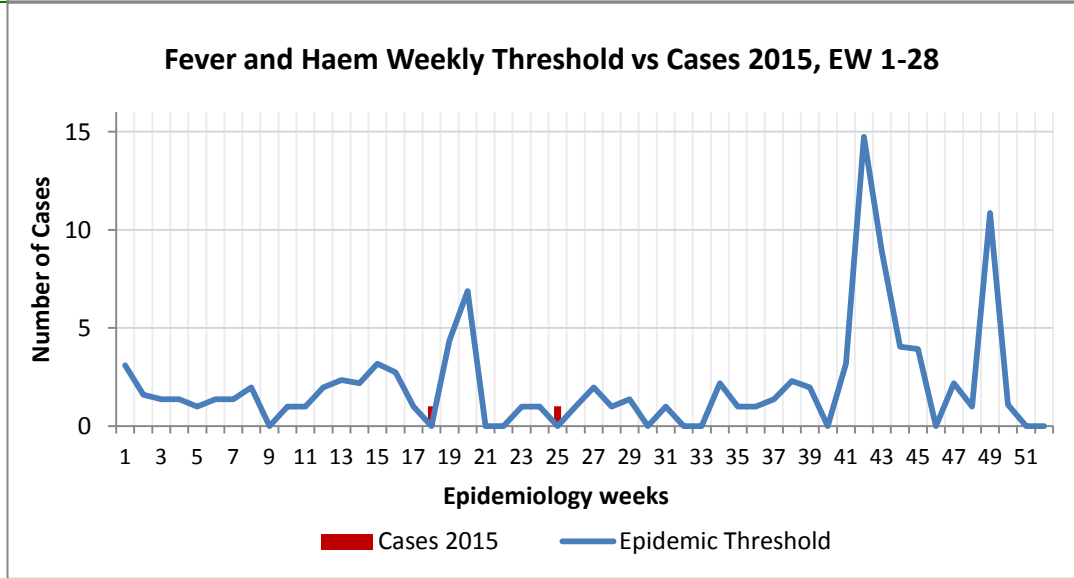
FEVER AND RESPIRATORY

Temperature of $>38^{\circ}C / 100.4^{\circ}F$ (or recent history of fever) in a previously healthy person with or without respiratory distress presenting with either cough or sore throat.



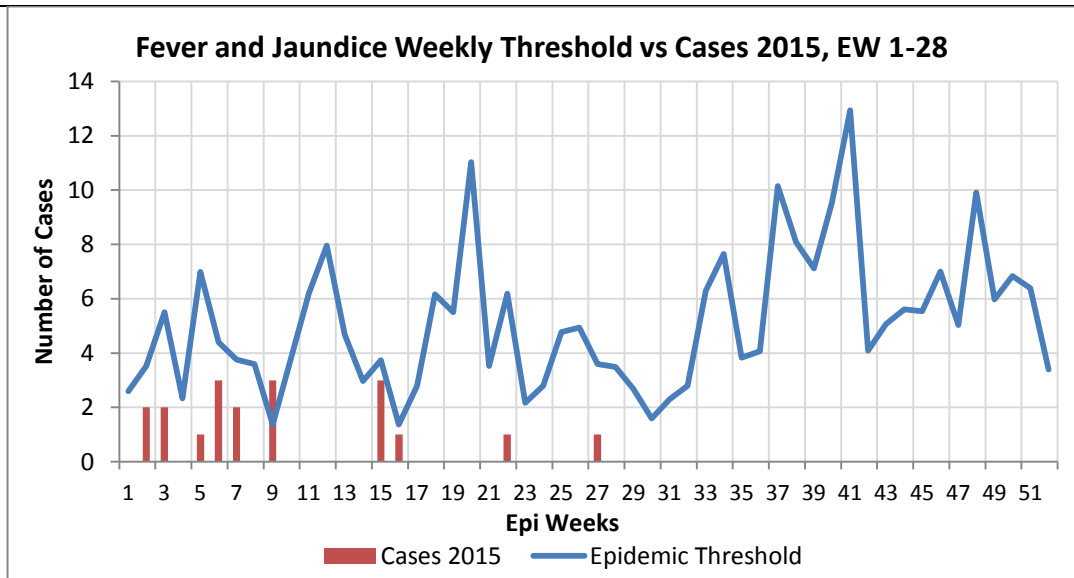
FEVER AND HAEMORRHAGIC

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



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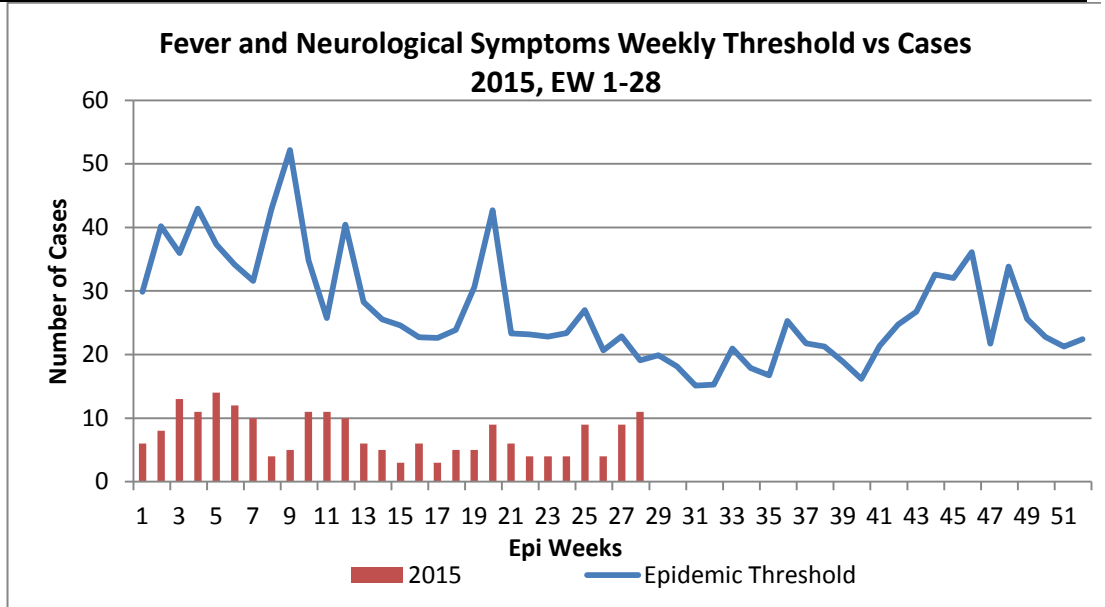
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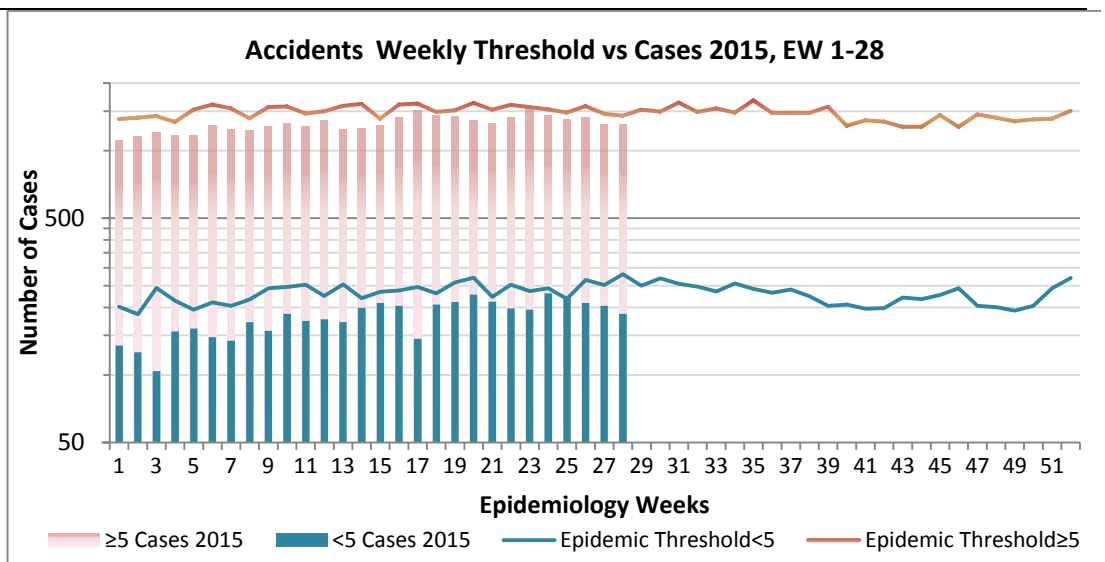
FEVER AND NEUROLOGICAL

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).



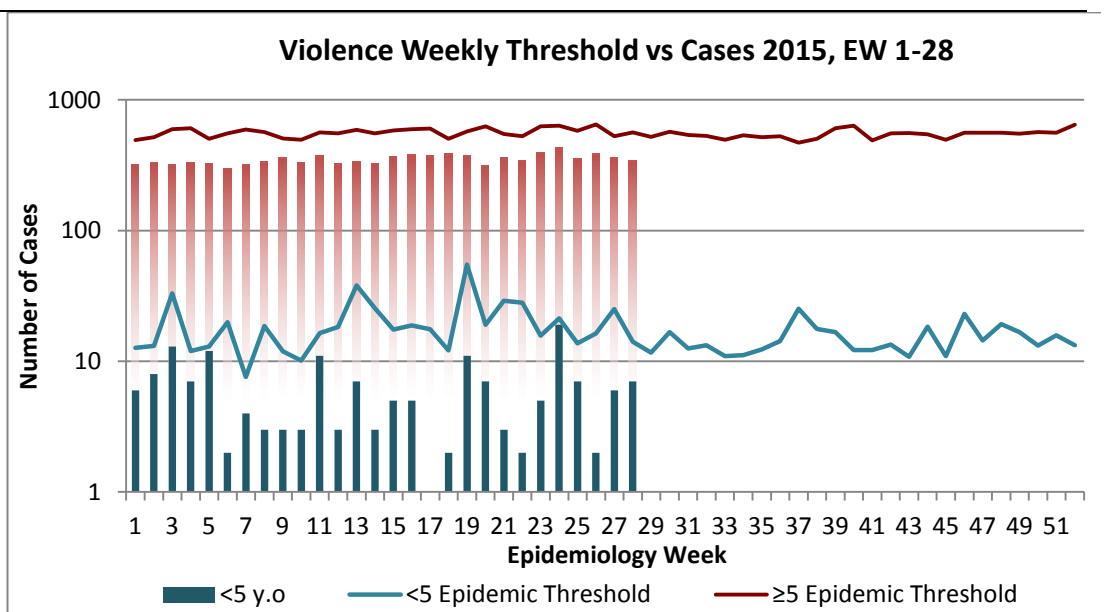
ACCIDENTS

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.



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— CLASS ONE NOTIFIABLE EVENTS and LEPTOSPIROSIS

Comments

	CONFIRMED YTD			
	CLASS 1 EVENTS	CURRENT YEAR	PREVIOUS YEAR	
NATIONAL /INTERNATIONAL INTEREST	Accidental Poisoning	329	348	
	Cholera	0	0	
	Dengue Hemorrhagic Fever ¹	0	0	
	Hansen's Disease (Leprosy)	0	1	
	Hepatitis B	8	43	
	Hepatitis C	2	6	
	HIV/AIDS - See HIV/AIDS National Programme Report			
	Malaria (Imported)	2	1	
	Meningitis	186	417	
EXOTIC/ UNUSUAL	Plague	0	0	
HIGH MORBIDITY/ MORTALITY	Meningococcal Meningitis	0	0	
	Neonatal Tetanus	0	0	
	Typhoid Fever	3	0	
	Meningitis H/Flu	0	0	
	AFP/Polio	0	0	
SPECIAL PROGRAMMES	Congenital Rubella Syndrome	0	0	
	Congenital Syphilis	0	0	
	Fever and Rash	Measles	0	0
		Rubella	0	0
	Maternal Deaths ²	22	21	
	Ophthalmia Neonatorum	128	169	
	Pertussis-like syndrome	0	0	
	Rheumatic Fever	2	6	
	Tetanus	1	0	
	Tuberculosis	23	39	
Yellow Fever	0	0		
UNCLASSIFIED**	Leptospirosis	12	9	

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.

The TB case detection rate established by PAHO for Jamaica is at least 90% of their calculated estimate of cases in the island, this is 180 (of 200) cases per year.

*Data not available

**Leptospirosis is awaiting classification as class 1, 2 or 3

¹ Dengue Hemorrhagic Fever data include Dengue related deaths;

² Maternal Deaths include early and late deaths.



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NATIONAL SURVEILLANCE UNIT INFLUENZA REPORT

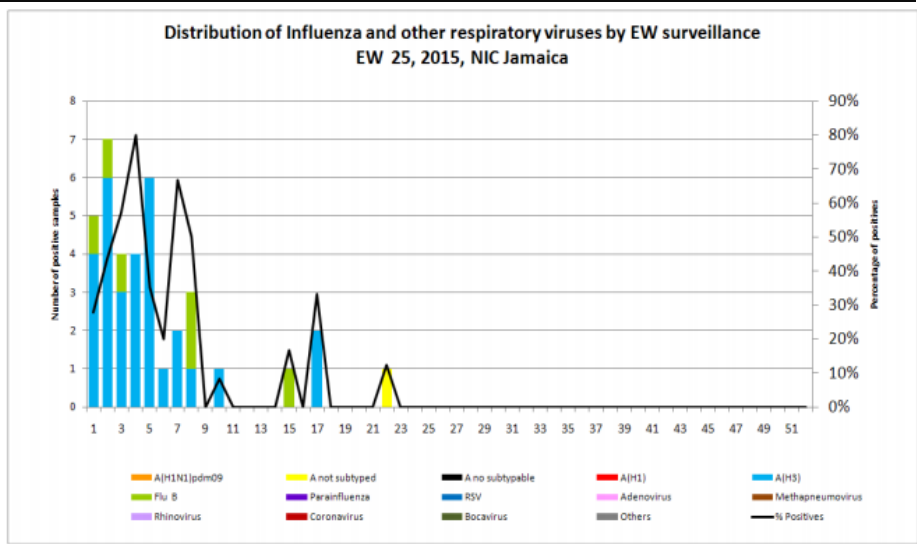
EW 28

July 12 – July 18, 2015

Epidemiology Week 28

July, 2015			Admitted Lower Respiratory Tract Infection and LRTI-related Deaths				
	EW 28	YTD	Current year		Previous year		
			Week 28 2015	YTD 2015	Week 28 2014	YTD 2014	
SARI cases	12	516					
Total Influenza positive	0	37					
Samples							
Influenza A	0	31					
H3N2	0	30					
H1N1pdm09	0	0	Admitted Lower Respiratory Tract Infections	68	2296	67	1928
Influenza B		6	Pneumonia-related Deaths	2	38	3	39

Comments:
 The current circulation of influenza viruses is sporadic with Influenza viruses detected between epidemiological weeks 1 and 22 consisting of A/H3N2 (81%) and Influenza B, Yamagata Lineage (16%). Both viruses are components of the 2014 -2015 Influenza Vaccines for the Northern Hemisphere.

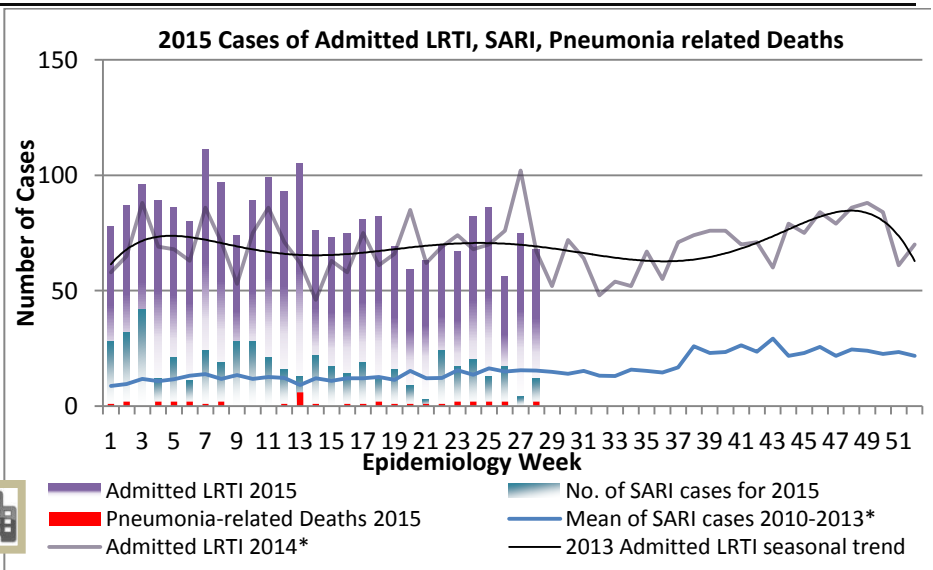


INDICATORS


Burden
 Year to date, respiratory syndromes account for 3.7% of visits to health facilities.

Incidence
 Cannot be calculated, as data sources do not collect all cases of Respiratory illness.

Prevalence
 Not applicable to acute respiratory conditions.



***Additional data needed to calculate Epidemic Threshold**

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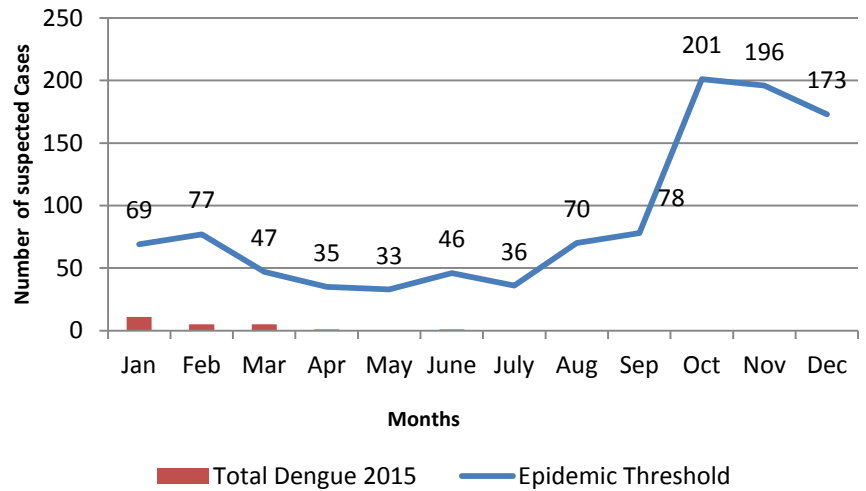
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Dengue Bulletin

July 12 – July 18, 2015

Epidemiology Week 28

2015 Cases vs. Epidemic Threshold

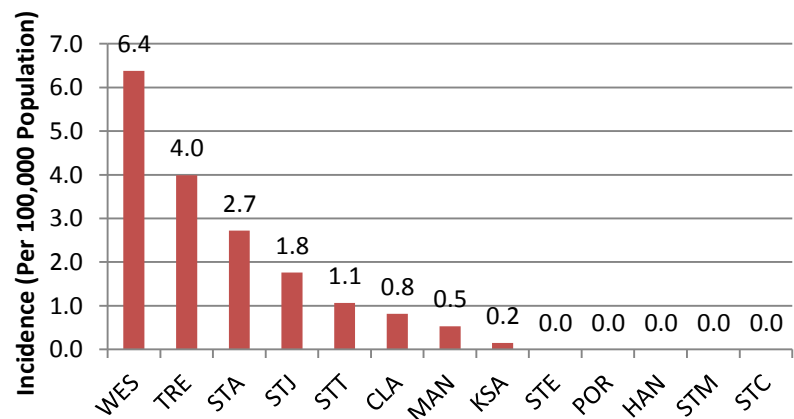


DISTRIBUTION

Year-to-Date Suspected Dengue Fever

	M	F	Total	%
<1	3	2	5	17.2
1-4	1	0	1	3.4
5-14	3	3	6	20.7
15-24	1	1	2	6.9
25-44	6	5	11	37.9
45-64	2	1	3	10.3
≥65	1	0	1	3.4
Unknown	0	0	0	0
TOTAL	17	12	29	100

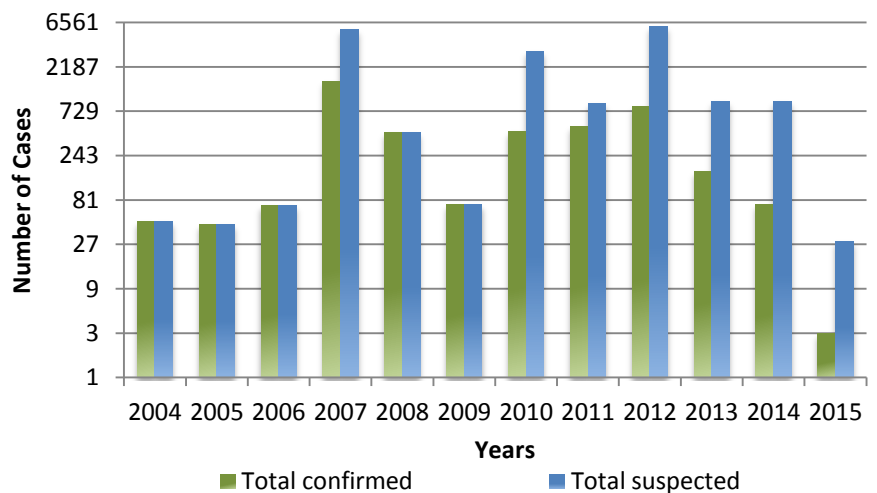
Parish Incidence



Weekly Breakdown of suspected and confirmed cases of DF,DHF,DSS,DRD

		2015		2014 YTD
		EW 28	YTD	
Total Suspected Dengue Cases		0	29	110
Lab Confirmed Dengue cases		0	3	0
CONFIRMED	DHF/DSS	0	0	2
	Dengue Related Deaths	0	0	2

Dengue Cases by Year, 2004-2015, Jamaica



*Y-axis values presented in logarithmic scale, base 3.



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Gastroenteritis Bulletin

EW
28

July 12 – July 18, 2015

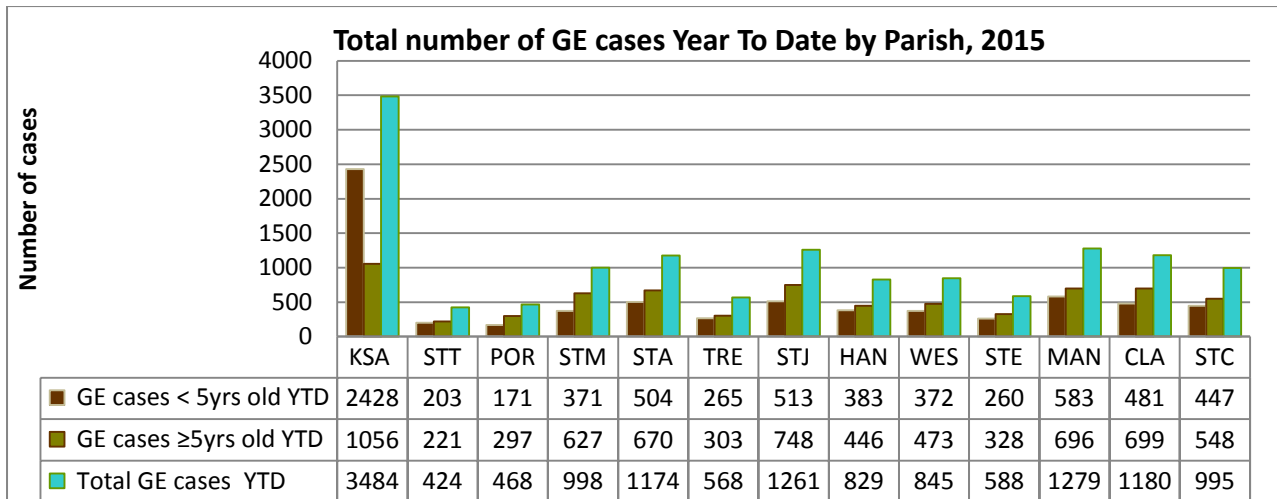
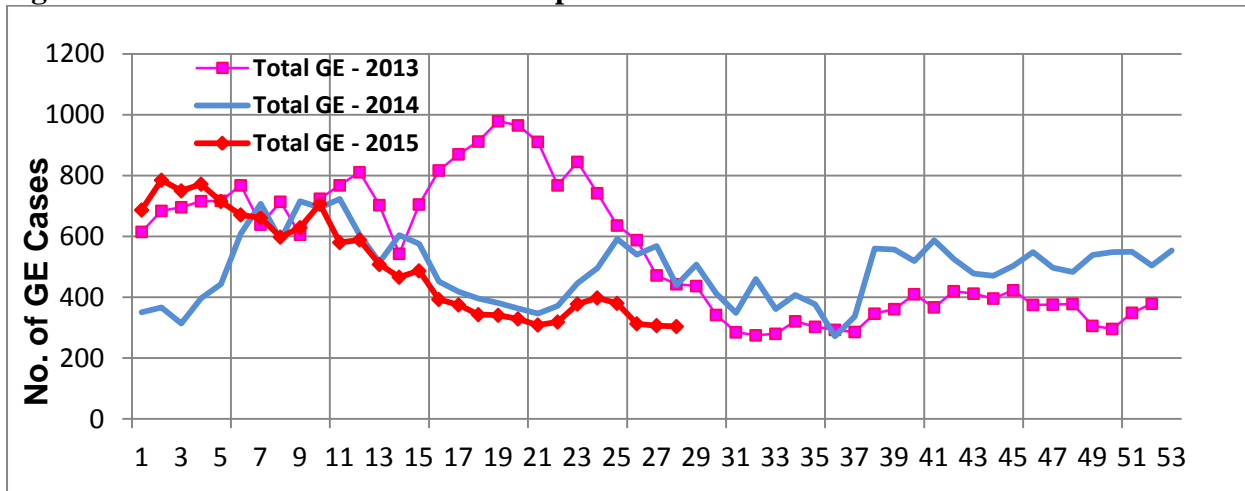
Epidemiology Week 28

Weekly Breakdown of Gastroenteritis cases

Year	EW 28			YTD		
	<5	≥5	Total	<5	≥5	Total
2015	125	179	304	6981	7112	14093
2014	263	177	440	7143	6856	13999

In Epidemiology Week 28, 2015, the total number of reported GE cases showed a 31% decrease compared to EW 28 of the previous year. The year to date figure showed a 1% increase in cases for the period.

Figure 1: Total Gastroenteritis Cases Reported 2013-2015



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RESEARCH PAPER

Leadership hubs: Dynamic collaborations to engage nurses in strengthening the health care system for HIV and AIDS care in Jamaica

E Kahwa¹, J. Aiken¹, U Atkinson¹, P Dawkins, ¹C Hepburn -Brown, ¹T Rae¹, S Roelofs², N Edwards².

¹The UWI School of Nursing, Mona, University of the West Indies, Kingston⁷, Jamaica

²University of Ottawa, School of Nursing, Ottawa, Canada

Objective: To examine the impact of leadership hubs on quality of nursing care in Jamaica for persons living with HIV/AIDS.

Methods: Three leadership hubs consisting of frontline nurses, nurse managers, researchers, decision makers and community representatives were established in purposively selected intervention parishes in Jamaica. Leadership hubs were trained to use research and influence policy. Data were collected before and after the leadership hub intervention in both intervention and control parishes using a survey questionnaire with randomly selected nurses about clinical practice (including stigma), policies and procedures, quality assurance processes, and through an institutional human resource management assessment tool for HIV and AIDS environments. Hubs assessed changes in their own capacity to engage in evaluation research and influence policy.

Results: Hub members reported statistically significant increases in their evaluation of policy capacity ($p < 0.01$). While there were statistically significant improvements in pre versus post stigma scores for intervention parishes ($p < 0.001$) compared to control parishes, differences were not significant for other clinical practices, policies and procedures of quality assurance processes. Intervention parishes had better post intervention outcomes than control parishes for 50% of quality assurance indicators and 70% of policies and procedures. However, declines were observed in clinical assessment and management outcomes for both intervention and control parishes for 5 of the 12 indicators.

Conclusions: The leadership hub intervention had limited impact on the quality of nursing care for HIV and AIDS. Though leadership hubs are a promising, feasible model, longer intervention periods are required in order to determine their true impact.



The Ministry of Health
24-26 Grenada Crescent
Kingston 5, Jamaica
Tele: (876) 633-7924
Email: mohsurveillance@gmail.com



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