INFLUENZA SENTINEL SURVEILLANCE REPORT

Surveillance Report

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Program	**Influenza Sentinel Surveillance ILI and SARI**	
Start Year	**2008**	
Provinces (Sites)	Lusaka **[UTH Pediatric, UTH Adult Hospital, Chipata Clinic]** Copperbelt **[Ndola Central Hospital, Arthur Davison Hospital, New Masala Clinic]**	
Type of site	Out Patient Clinics (ILI)	In Patient Hospital (SARI)
Case definition	**Influenza-Like Illness (ILI):** Out-patient consultation AND temperature 38ºC and above or history of fever AND cough or sore throat	**Severe Acute Respiratory Illness (SARI):** 5 yrs. and above: Patient admitted with less than 7 days duration of illness AND temperature 38ºC and above or history of fever AND cough or sore throat AND difficulty breathing. 2m-5yrs: Patient admitted with less than 7 days duration of illness AND cough or difficulty breathing AND one of symptoms Tachypnoea (2m-1yr RR >50; 1-5yrs RR >40 Unable to drink or breastfeed Lethargic or unconscious Vomits everything (not only occasional) Convulsions Chest in-drawing (retractions under ribcage/ stridor in a calm child)
Specimen collected	Nasal-pharyngeal/ Oral-Pharyngeal Swab	
Main pathogen tested	Influenza	

Methodology for Establishment of Epidemic Thresholds

Thresholds are calculated using Moving Epidemic Methods (MEM), a sequential analysis using R language available from: http//CRAN.R-project.org/web/package =mem) designed to calculate the duration, start and end of the annual influenza epidemic. MEM uses the 40th, 90th and 97.5th percentile established from available years of historical data to calculate threshold activities. Threshold activity for influenza is categorized as: below epidemic threshold, low, moderate, high or very high. Transmissibility of influenza can be inferred from ILI data while SARI data gives an indication of severity.

Summary

There was increased influenza activity in the second half of 2019 between epi-weeks 31 and 35. Rates of Influenza-Like Illness (ILI) and Severe Acute Respiratory Infection (SARI) attributable to influenza virus infection were within the moderate – high threshold and remained within the low seasonal threshold. This second cycle of activity was of high transmissibility and low severity. Children below five years of age were most affected.

ILI Surveillance:

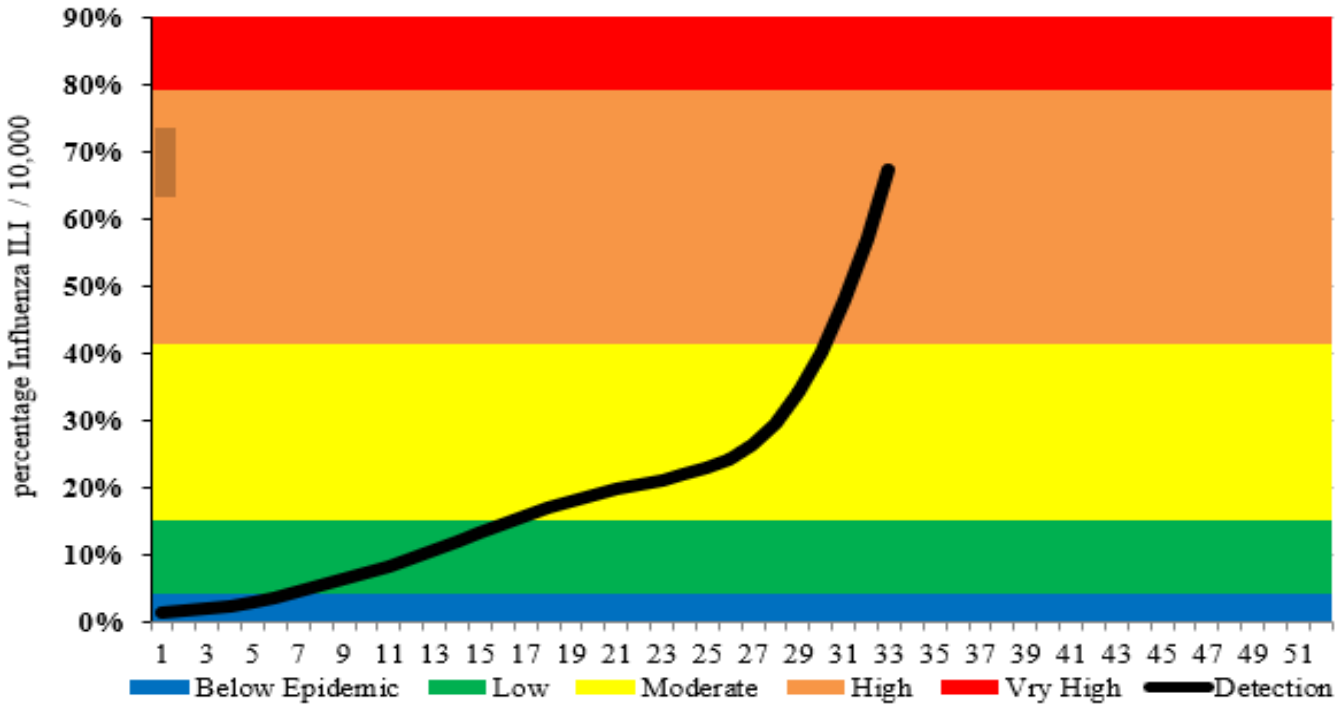
Specimens from 719 outpatients were received from two ILI surveillance sites. 587 (82%) were adequately sampled and tested. Influenza virus was detected in 82 (14%) of these samples of which, 54 were identified as Influenza B, 3 Influenza A H3N2, 3 Influenza A H1N1 (pandemic), 18 influenza A Untyped and 4 as Influenza A unsubtypeable.

SARI Surveillance:

During this same period, specimens were received from 1242 patients admitted to four SARI surveillance sites. 801 (64%) were adequately sampled and tested. Influenza was detected in 93 (12%) specimens; 68 of which were identified as Influenza B, 1 as Influenza A H3N2, 5 as Influenza A H1N1 (pandemic), 16 influenza A Untyped and 3 as Influenza A unsubtypeable.

Influenza Transmissibility

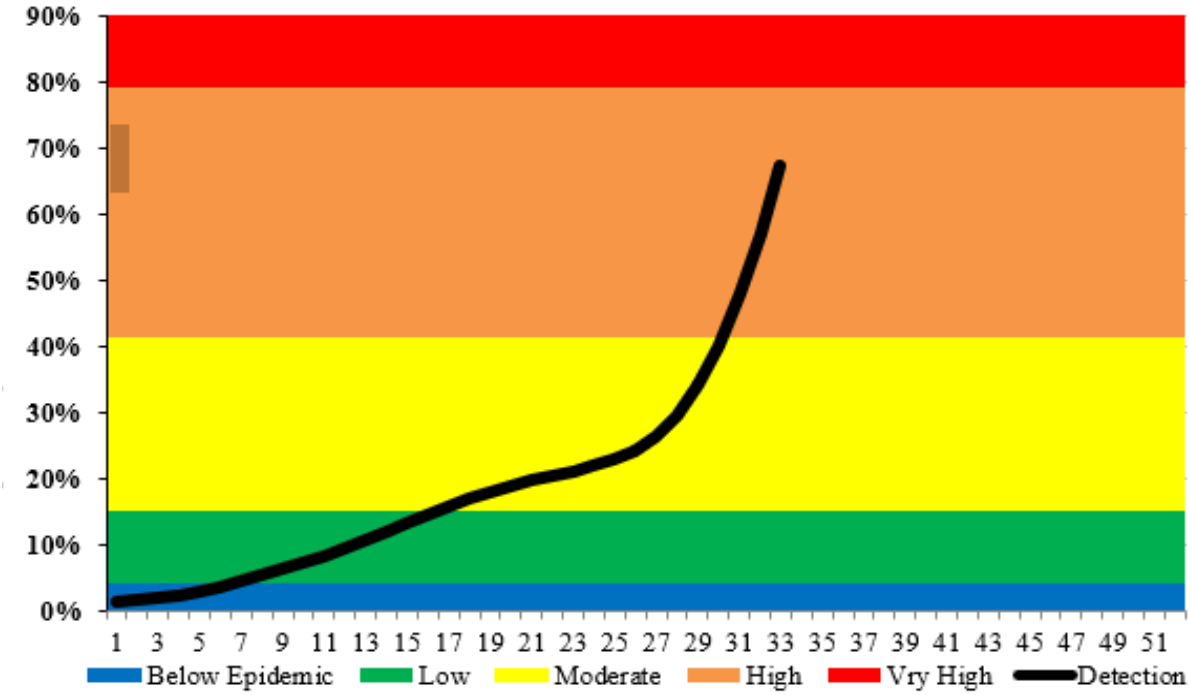
Fig 1: Percentage of Influenza Positive ILI Cases1 (Out-Patient Visit Surveillance) per Epi-Week Against Epidemic Thresholds Set Using 2013 – 2018 Data



[1]**ILI Case / Total ILI Sampled *100**

In August 2019, ILI outpatient visits attributable to influenza virus infection were above the moderate epidemic threshold between weeks 31 and 34.

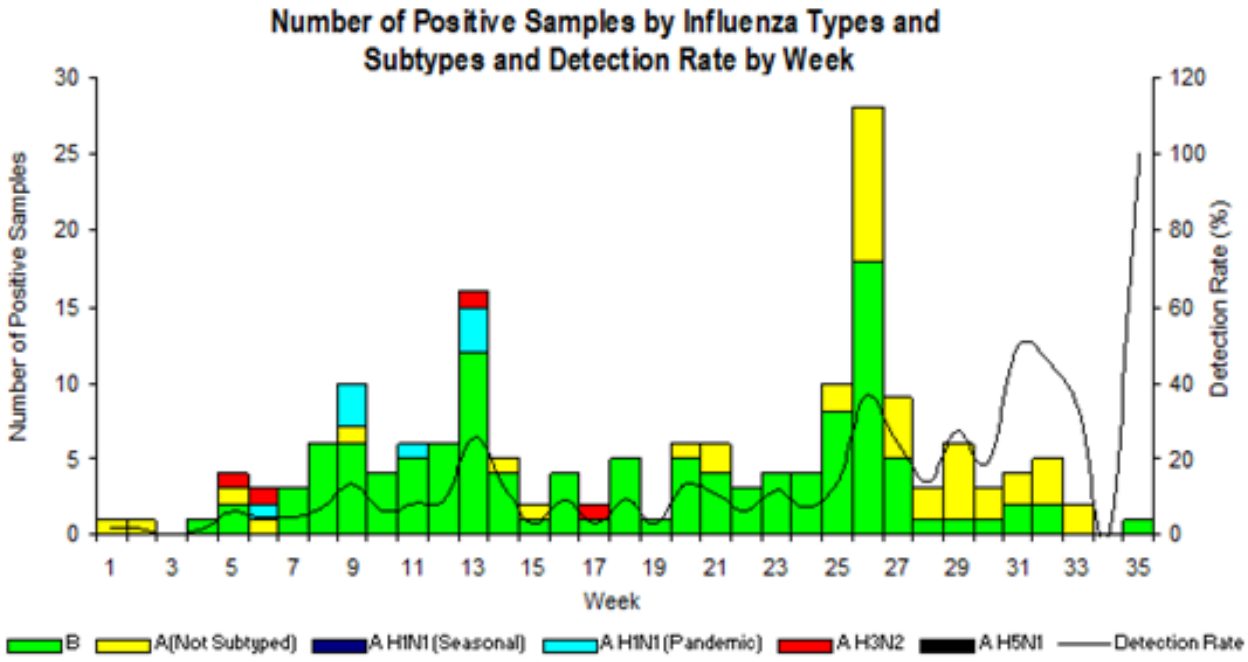
30th June 2019: Influenza Severity (Impact)
Fig 2: Hospital Admission Surveillance1 - (SARI Surveillance) for Influenza Detection and Epidemic Thresholds *



[1]SARI Case / Total Admission Sampled *100
***Threshold based on 2013 – 2018**

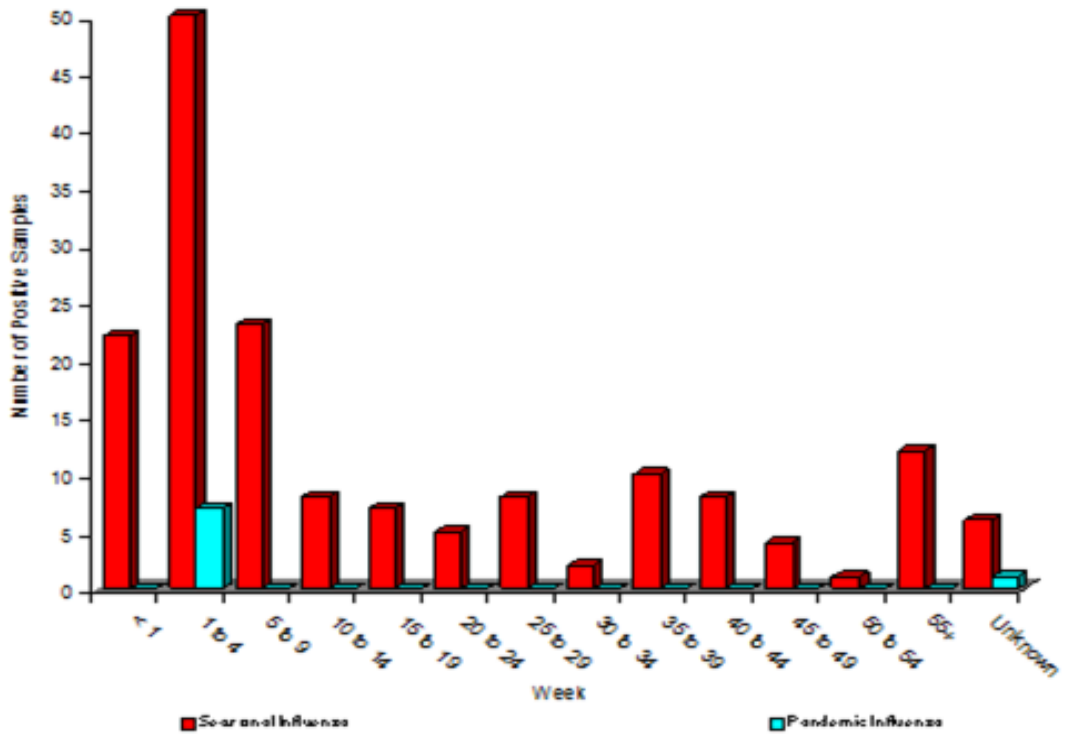
In August 2019, a SARI admission attributable to influenza virus infection rose to moderate threshold in week 31 but has remained in low epidemic threshold from week 34 to week 35.

Fig 3: Positives samples* by influenza types and detection rate by weeks in 2019.



*Influenza viruses circulating in the first half of 2019 were predominantly influenza B. There was also random detection of influenza A. Among the influenza A viruses that have been subtyped, H1N1 (Pandemic) and H3N2 were seen. Most viruses were detected between weeks 5 and 16

Fig 4: Number of Influenza Positive Cases by Age Group



The virus circulation was greater at either end of the age spectrum but the most affected age groups were the under-fives

Fig: 5: Cumulative number of influenza types and subtypes and total number of samples tested by sentinel sites.

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Case	B	A (Not typed)	AH1N1 (Seasonal)	AH1N1 (Pandemic)	A H3N2	A H5N1	Total Samples Tested
ILI	51	22	0	3	3	0	591
SARI	43	14	0	1	1	0	797
Unknown	26	6	0	4	0	0	296
Total	**120**	**42**	**0**	**8**	**4**	**0**	**1684**

District	Hospital/ Clinic	B	A (Not typed)	AH1N1 (Seasonal)	AH1N1 (Pandemic)	A H3N2	A H5N1	Total Samples Tested
	UTH Filter	8	11	0	0	0	0	323
Lusaka	UTH Pediatric	15	3	0	0	0	0	207
	Chipata Clinic	2	9	0	0	0	0	214
	Ndola Central	21	2	0	0	0	0	342
Ndola	Arthur Davison	22	4	0	5	1	0	201
	New Masala	52	13	0	3	3	0	397
Others Sites	Other Hospital/Clinic	0	0	0	0	0	0	0
	Total	**120**	**42**	**0**	**8**	**4**	**0**	**1684**

The total number of samples collected as at 31st August 2019, is 1961; 1671(85%) were tested. 173 (10.4%), were positive for influenza virus and 1498 (89.6%) were negative.