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 Cases (Out-Patient Visit Surveillance) per Epi-Week Against Epidemic Thresholds Set Using 2013 – 2018 Data

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 *

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.

1SARI Case / Total Admission Sampled *100
*Threshold based on 2013 - 2018
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.
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.