### 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 first half of 2019 between epi-weeks 4 and 22. Rates of Influenza-Like Illness (ILI) and Severe Acute Respiratory Infection (SARI) attributable to influenza virus infection remained within the low seasonal threshold. This first cycle of activity was of low transmissibility and low severity. Children below five years of age were most affected.
ILI Surveillance:
Specimens from 553 outpatients were received from two ILI surveillance sites. 455 (82%) were adequately sampled and tested. Influenza virus was detected in 37 of these samples of which, 27 were identified as Influenza B, 3 Influenza A H3N2, 3 Influenza A H1N1 (pandemic) and 4 as Influenza A unsubtypeable.

SARI Surveillance:
During this same period, specimens were received from 1055 patients admitted to four SARI surveillance sites. 651 (62%) were adequately sampled and tested. Influenza was detected in 29 specimens; 24 of which were identified as Influenza B, 1 as Influenza A H3N2, 1 as Influenza A H1N1 (pandemic) 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

In July 2019, SARI admissions attributable to influenza virus infection remained below epidemic threshold from week 27 to week 30.
30th June 2019: Influenza Severity (Impact)

Fig 2: Hospital Admission Surveillance - (SARI Surveillance) for Influenza Detection and Epidemic Thresholds *

May – June 30th 2019, SARI admissions attributable to influenza virus infection from weeks 23 -26, fell below epidemic threshold for high severity.

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.

*Specimens from patients with influenza-like illness at two (2) sentinel sites and three (3) sentinel sites for admitted patients from week 1 -25. The 2019 influenza season is currently characterized by a high spread of seasonal influenza and random detection of flu A, A H1N1 and subtypes A H3N2 in weeks, 1 - 17. A high number of seasonal influenza was detected between weeks 7-18 from all sentinel sites.

A high number of seasonal and pandemic A influenza detections was in the age group between 1 - 4 years.
The total number of samples collected as at 31st July 2019, is 1584; 1334 (84%) were tested. 89 (7%), were positive for influenza virus and 1245 (93%) were negative.