



| Page | Content |
|-------------|---|
| 2 | Surveillance programme description |
| 3 | Comments |
| 4-5 | Systematic Influenza-like illness (ILI) surveillance Influenza Respiratory syncytial virus |
| 6-7 | Influenza-like illness (ILI) Viral Watch Influenza |
| 8-10 | National syndromic surveillance for pneumonia Influenza Respiratory syncytial virus |
| 11 | Private Hospital Consultation Outpatient consultations In patient consultations |

Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

Programme Descriptions

| Programme | Influenza-like illness (ILI) | Viral Watch | National syndromic surveillance for pneumonia | Private hospital consultations |
|---------------------------------|---|---|--|--|
| Start year | 2012 | 1984 | 2009 | 2002 |
| Provinces* | KZ NW WC** | EC FS GP LP MP NC NW WC | GP KZ MP NW WC | EC FS GP LP MP NW WC |
| Type of site | Primary health care clinics | General practitioners | Public hospitals | Private hospitals |
| Case definition | An acute respiratory illness with a temperature ($\geq 38^{\circ}\text{C}$) and cough, & onset ≤ 10 days | An acute respiratory illness with a temperature ($\geq 38^{\circ}\text{C}$) and cough, & onset ≤ 10 days | Acute or chronic lower respiratory tract infection | ICD codes J10-J18 |
| Specimens collected | Oropharyngeal & nasopharyngeal swabs | Throat and/or nasal swabs or Nasopharyngeal swabs | Oropharyngeal & nasopharyngeal swabs | Not applicable |
| Main pathogens tested*** | INF RSV BP | INF RSV BP | INF RSV BP | Not applicable |

Epidemic Threshold

Thresholds are calculated using the Moving Epidemic Method (MEM), a sequential analysis using the 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 percentiles established from available years of historical data to calculate thresholds of activity. Thresholds of activity for influenza and RSV are defined as follows: Below seasonal threshold, Low activity, Moderate activity, High activity, Very high activity. For influenza, thresholds from outpatient influenza like illness (Viral Watch Programme) are used as an indicator of disease transmission in the community and thresholds from pneumonia surveillance are used as an indicator of impact of disease.

* EC: Eastern Cape; FS: Free State; GP: Gauteng; KZ: KwaZulu-Natal; LP: Limpopo; MP: Mpumalanga; NC: Northern Cape; NW: North West; WC: Western Cape

**Started in 2019

***INF: influenza virus; RSV: respiratory syncytial virus; BP: *Bordetella pertussis*;

Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

Reporting period 01/01/2019 to 16/06/2019

Results until end of epidemiologic week 24(2019)

Comments:

Influenza

The 2019 season which started in week 16 (week ending 21 April) when influenza detection in the Viral Watch programme rose above the seasonal threshold, as determined by the Moving Epidemic Method, continues. Influenza transmission and impact are both currently high.

ILI programme: In 2019 to date, specimens from 845 patients were received from 4 ILI sites. Influenza was detected in 87 specimens, 13 were identified as influenza A(H1N1)pdm09 and 74 as influenza A(H3N2).

Viral Watch programme: During the same period, specimens were received from 780 patients from Viral Watch sites in 6 provinces. Eleven influenza detections were made from 61 specimens (18%) in the first three months of the year, mainly from travellers.

Since April influenza was detected in 518 patients, of which 20 were influenza A(H1N1)pdm09, 487 influenza A(H3N2), and 7 influenza A subtyping inconclusive.

Pneumonia surveillance: In this time period, specimens from 2210 patients with severe respiratory illness (SRI) were received from the 6 sentinel sites. Influenza was detected in 116 patients, influenza A(H1N1)pdm09 in six, influenza A(H3N2) in 103, influenza B(Yamagata) in one, and one dual positive for influenza A(H1N1)pdm09 and A(H3N2). In addition there were five influenza A subtype inconclusive.

Respiratory syncytial virus

The 2019 RSV season started in week 8 (week starting 18 February) when RSV detections in pneumonia surveillance rose above the seasonal threshold, as determined by the Moving Epidemic Method.

In 2019 to date, RSV has been detected in the specimens of 113 patients in the ILI programme, 664 patients in the pneumonia surveillance programme and in 18 patients in the Viral Watch programme. The detection rate for RSV is declining in all programmes following a peak in week 17 (week starting 29 April) in the pneumonia surveillance programme.

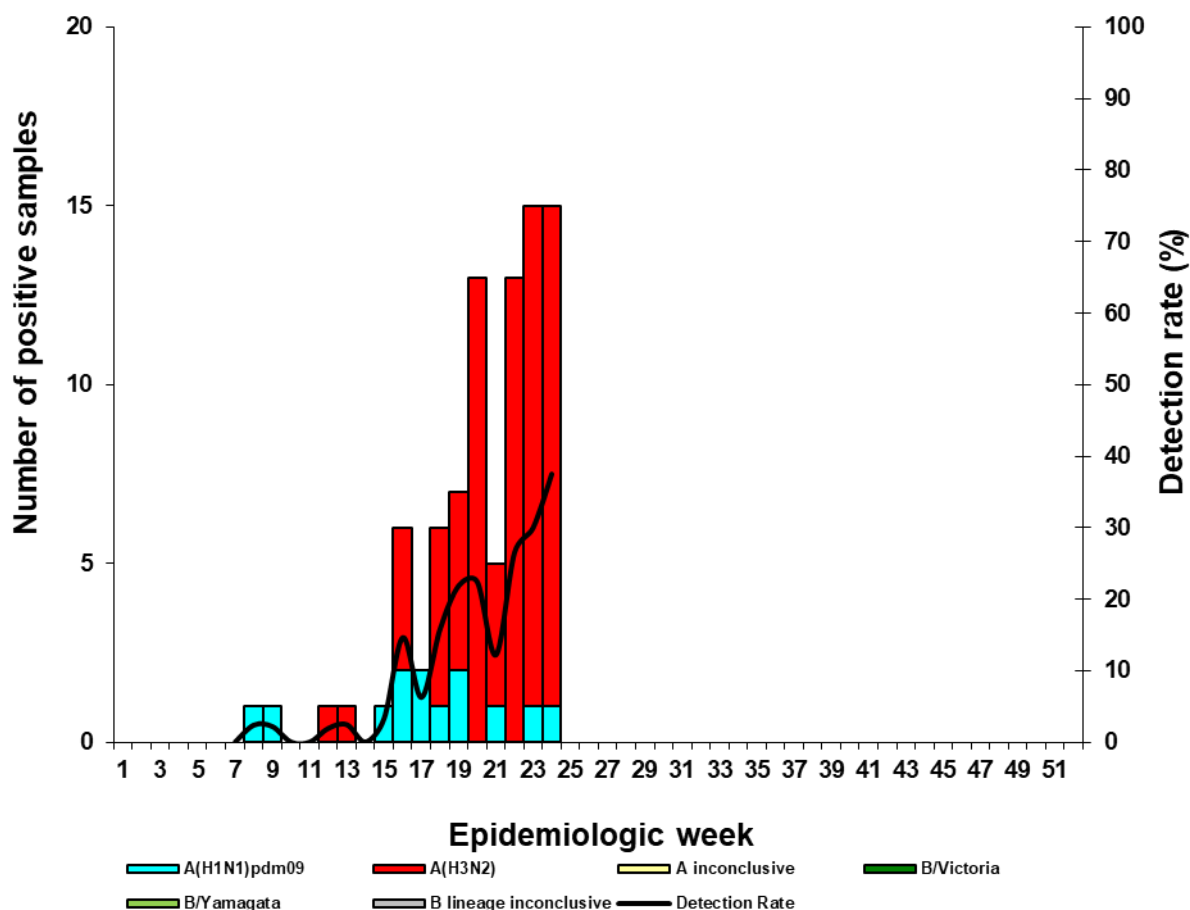
Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

Reporting period 01/01/2019 to 16/06/2019

Results until end of epidemiologic week 24 (2019)

Influenza-like illness (ILI) surveillance primary health care clinics

Figure 1. Number of positive samples* by influenza subtype and lineage and detection rate** by week



*Specimens from patients with influenza-like illnesses at 3 sentinel sites in 3 provinces

**Only reported for weeks with >10 specimens submitted

Inconclusive: insufficient viral load in sample and unable to characterise further

Table 1. Cumulative number of influenza subtype and lineage and total number of samples tested by clinic and province

| Clinic (Province) | A(H1N1)pdm09 | A(H3N2) | A subtype inconclusive | B/Victoria | B/Yamagata | B lineage inconclusive | Total samples |
|-----------------------|--------------|-----------|------------------------|------------|------------|------------------------|---------------|
| Eastridge (WC) | 11 | 50 | | | | | 498 |
| Edendale | 1 | | | | | | 42 |
| Gateway (KZ) | | | | | | | |
| Jouberton (NW) | 1 | 23 | | | | | 293 |
| Mitchell's Plain (WC) | | 1 | | | | | 12 |
| Total: | 13 | 74 | | | | | 845 |

KZ: KwaZulu-Natal; NW: North West; WCP: Western Cape

Inconclusive: insufficient viral load in sample and unable to characterise further

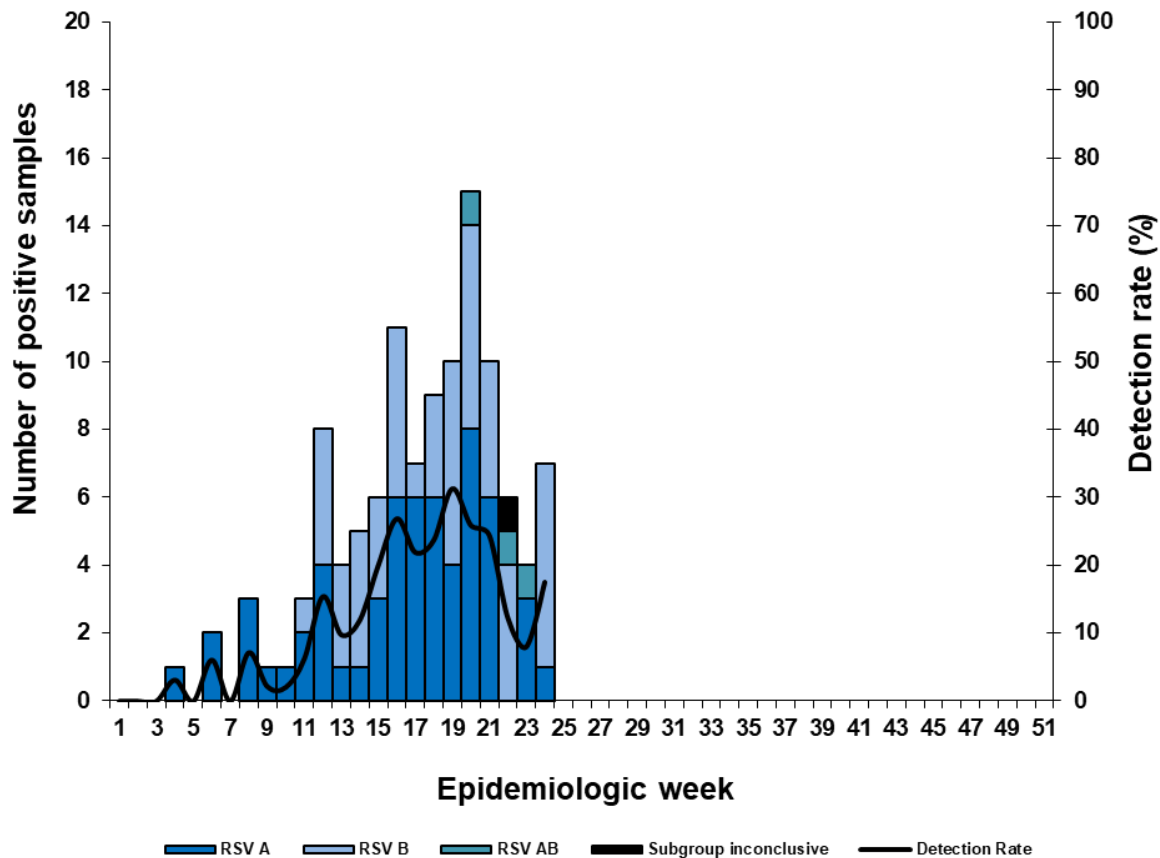
Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

Reporting period 01/01/2019 to 16/06/2019

Results until end of epidemiologic week 24(2019)

Influenza-like illness (ILI) surveillance primary health care clinics

Figure 2. Number of samples testing positive for respiratory syncytial virus by subgroup and detection rate by week



Inconclusive: insufficient viral load in sample and unable to characterise further
 RSV AB: Both RSV A and B subgroup identified

Table 2. Cumulative number of respiratory syncytial virus subgroups identified and total number of samples tested by clinic and province

| Clinic (Province) | RSV A | RSVB | RSVAB | Subgroup inconclusive | Total samples |
|-----------------------|-----------|-----------|----------|-----------------------|---------------|
| Eastridge (WC) | 25 | 50 | 2 | | 498 |
| Edendale Gateway (KZ) | 5 | | | | 42 |
| Jouberton (NW) | 29 | | 1 | 1 | 293 |
| Mitchell's Plain (WC) | | | | | 12 |
| Total | 59 | 50 | 3 | 1 | 845 |

KZ: KwaZulu-Natal; NW: North West; WC: Western Cape
 Inconclusive: insufficient viral load in sample and unable to characterise further
 RSV AB: Both RSV A and B subgroup identified

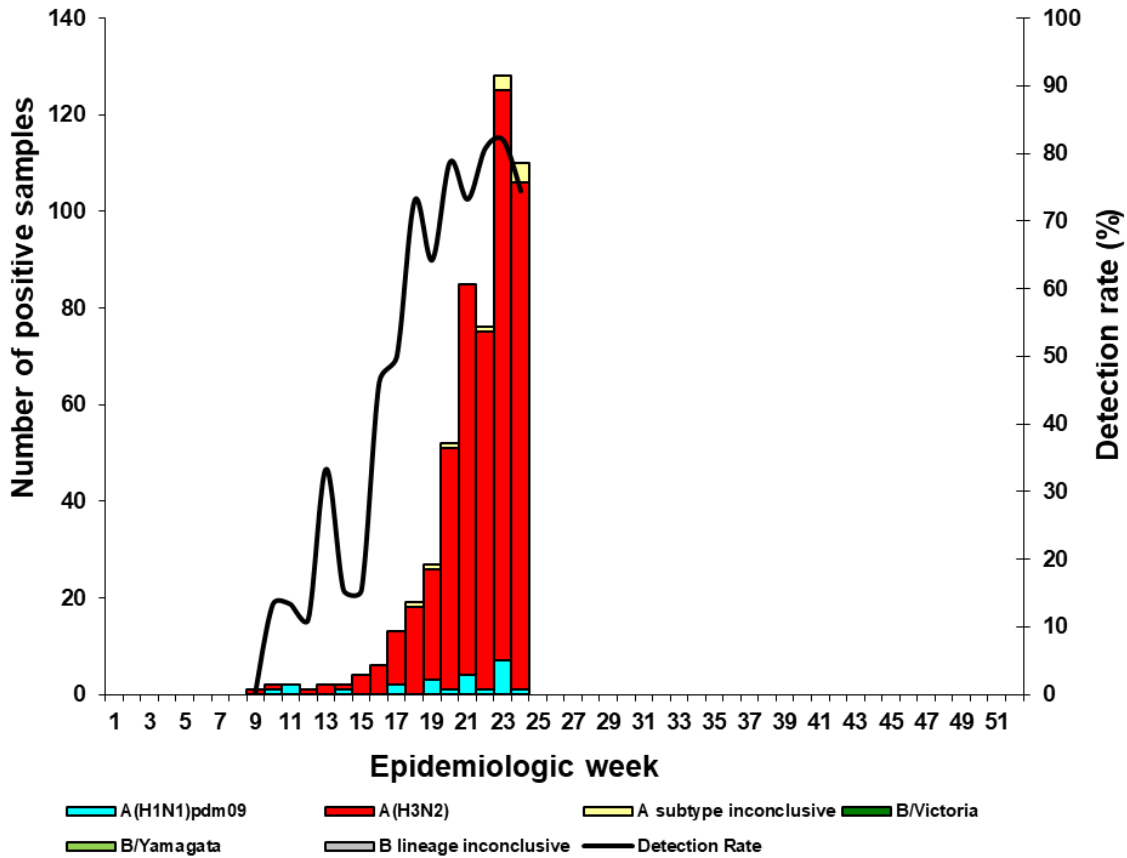
Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

Reporting period 01/01/2019 to 16/06/2019

Results until end of epidemiologic week 24(2019)

Influenza-like illness (ILI) surveillance Viral Watch

Figure 4. Number of positive samples* by influenza subtype and lineage and detection rate** by week

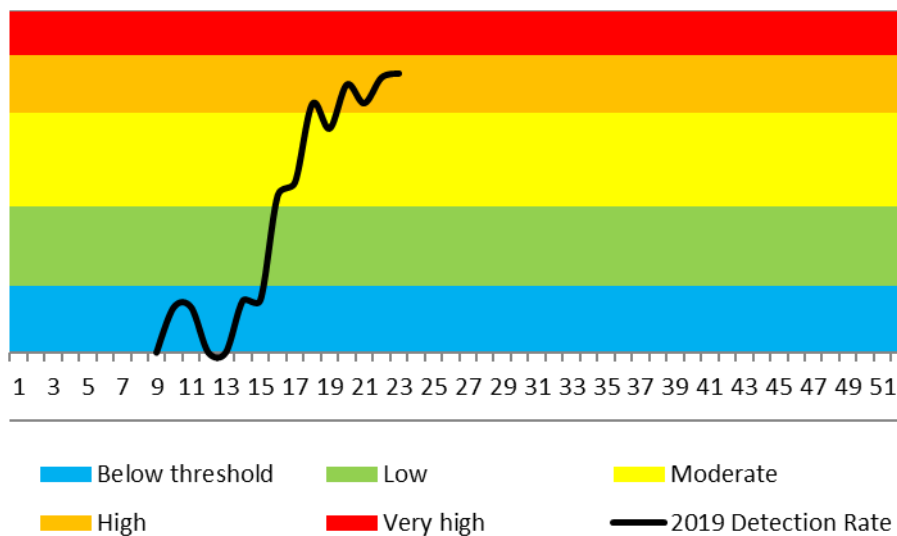


*Specimens from patients with Influenza-like illnesses at 90 sentinel sites in 8 provinces

** Only reported for weeks with >10 specimens submitted.

Inconclusive: insufficient viral load in sample and unable to characterise further

Figure 5. ILI surveillance Viral Watch percentage influenza detections and epidemic thresholds*



*Thresholds based on 2008-2018 data (Excluding 2009)

Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

Reporting period 01/01/2019 to 16/06/2019

Results until end of epidemiologic week 24(2019)

Table 4. Cumulative number of influenza subtype and lineage and total number of samples tested by province

| Province | A(H1N1)pdm09 | A(H3N2) | A subtype inconclusive | B/Victoria | B/Yamagata | B lineage inconclusive | Total samples |
|---------------|--------------|------------|------------------------|------------|------------|------------------------|---------------|
| Eastern Cape | 1 | 36 | 2 | | | | 55 |
| Free State | | 35 | | | | | 45 |
| Gauteng | 3 | 161 | 1 | | | | 381 |
| Limpopo | | 2 | | | | | 8 |
| Mpumalanga | 3 | 16 | | | | | 42 |
| North West | | | | | | | 2 |
| Northern Cape | | | | | | | |
| Western Cape | 18 | 133 | 4 | | | | 247 |
| Total: | 25 | 383 | 7 | | | | 780 |

Inconclusive: insufficient viral load in sample and unable to characterise further

From 01 January 2019 to date, 27 patients were tested for influenza at the time of entry into South Africa following travel abroad and influenza was detected in three patients, of which one was influenza A(H1N1)pdm09 positive and two influenza A(H3N2).

Patients known to have acquired influenza abroad are not included in the table or epidemiological curve.

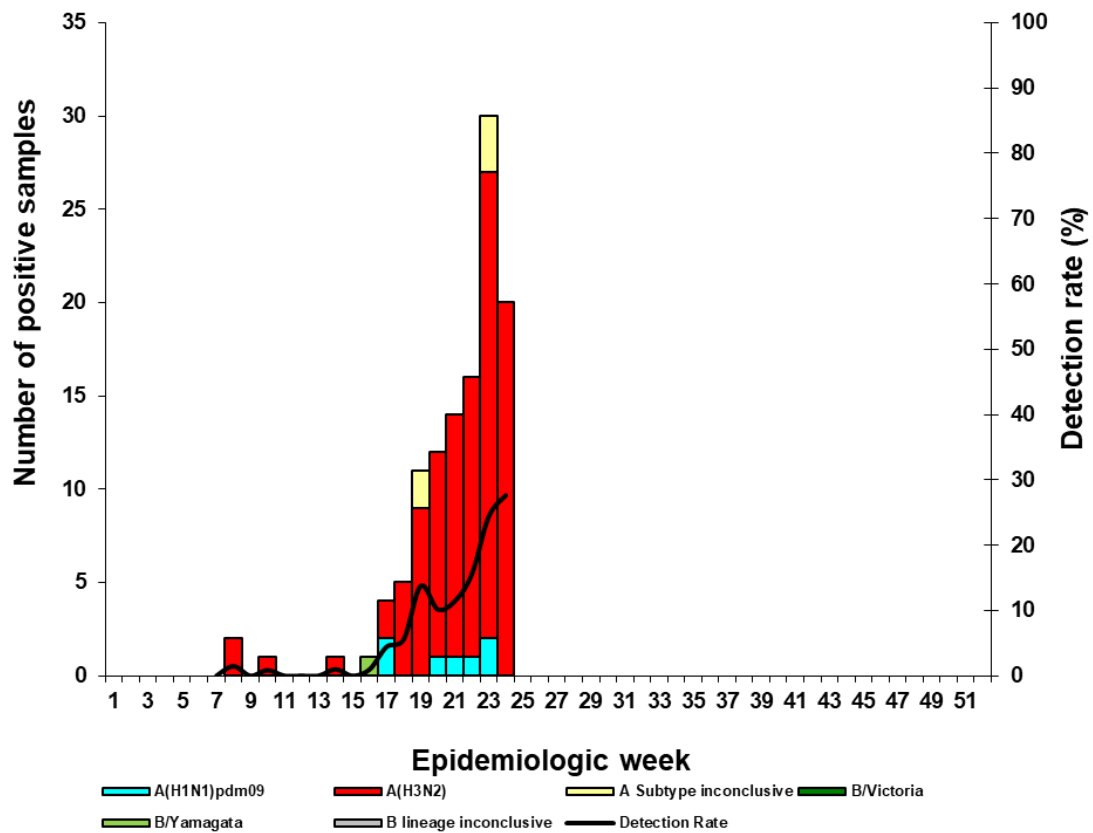
Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

Reporting period 01/01/2019 to 16/06/2019

Results until end of epidemiologic week 24(2019)

National syndromic surveillance for pneumonia

Figure 6. Number of positive samples* by influenza subtype and lineage and detection rate** by week

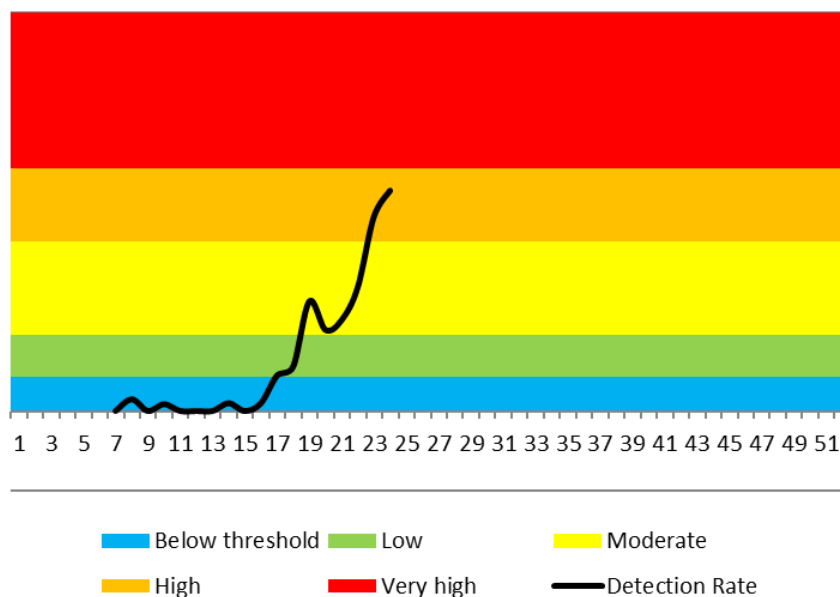


*Specimens from patients hospitalised with pneumonia at 6 sentinel sites in 5 provinces

**Only reported for weeks with >10 specimens submitted

Inconclusive: insufficient viral load in sample and unable to characterise further

Figure 7. National syndromic surveillance for pneumonia percentage influenza detections and epidemic thresholds*



*Thresholds based on 2010-2018 data

Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

Reporting period 01/01/2019 to 16/06/2019

Results until end of epidemiologic week 24(2019)

Table 5. Cumulative number of identified influenza subtype and lineage and total number of samples tested by hospital

| Hospital (Province) | A(H1N1)pdm09 | A(H3N2) | A subtype inconclusive | B/Victoria | B/Yamagata | B lineage inconclusive | Total samples |
|--------------------------------|--------------|------------|------------------------|------------|------------|------------------------|---------------|
| Edendale (KZ) | 2 | 2 | 1 | | | | 395 |
| Helen Joseph-Rahima Moosa (GP) | 0 | 26 | 1 | | | | 553 |
| Klerksdorp-Tshepong (NW) | 0 | 26 | | | | | 335 |
| Mapulaneng-Matikwana (MP) | 0 | 5 | | | 1 | | 235 |
| Mitchell's Plain (WC) | 2 | 15 | 2 | | | | 167 |
| Red Cross (WC) | 3 | 30 | 1 | | | | 525 |
| Total: | 7 | 104 | 5 | | 1 | | 2210 |

GP: Gauteng; KZ: KwaZulu-Natal; NW: North West; MP: Mpumalanga; WC: Western Cape

Inconclusive: insufficient viral load in sample and unable to characterise further

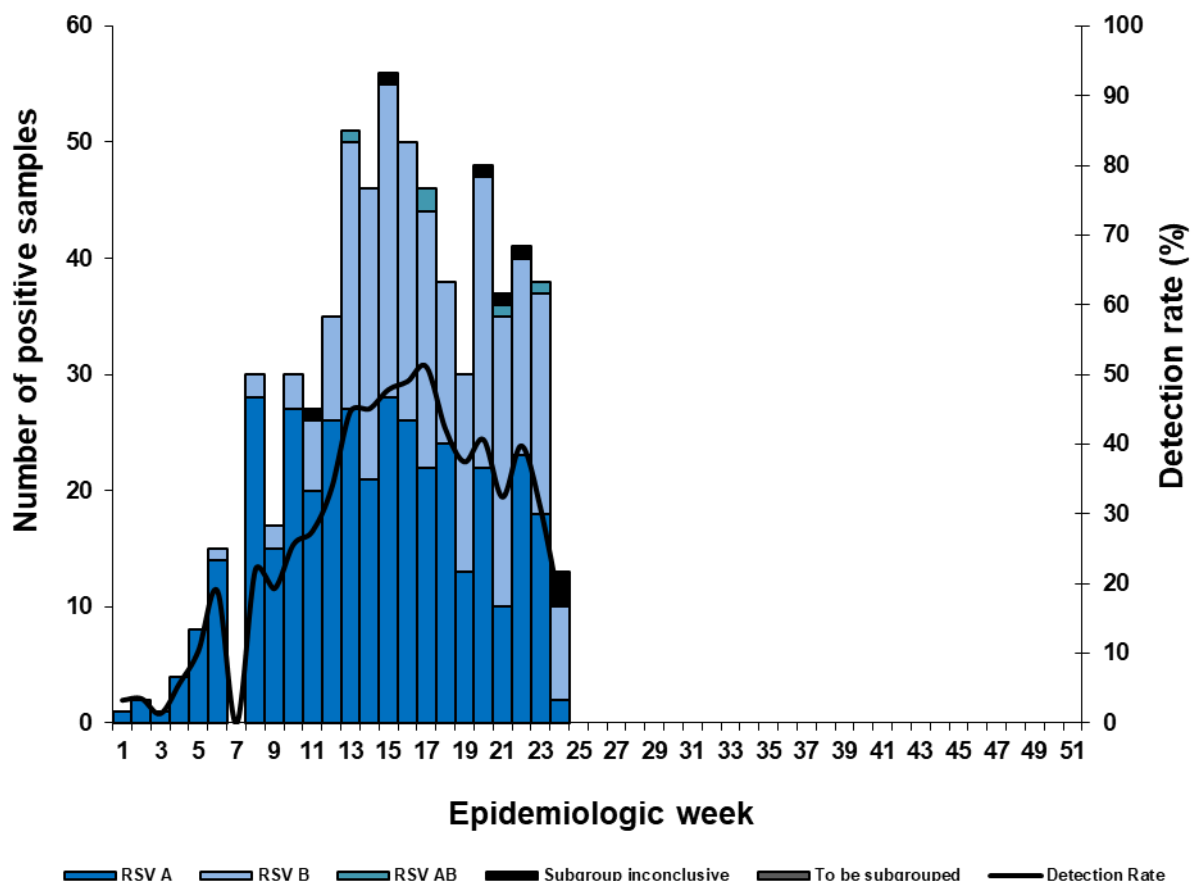
Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

Reporting period 01/01/2019 to 16/06/2019

Results until end of epidemiologic week 24(2019)

National syndromic surveillance for pneumonia

Figure 8. Number of samples testing positive for respiratory syncytial virus by subgroup and detection rate by week



Inconclusive: insufficient viral load in sample and unable to characterise further

RSV AB: Both RSV A and B subgroup identified

Table 6: Cumulative number of respiratory syncytial virus subgroups identified and total number of samples tested by hospital

| Hospital (Province) | RSVA | RSVB | RSVAB | Subgroup inconclusive | Total samples |
|--------------------------------|------------|------------|----------|-----------------------|---------------|
| Edendale (KZ) | 121 | 5 | 0 | 1 | 395 |
| Helen Joseph-Rahima Moosa (GP) | 99 | 53 | 2 | 2 | 553 |
| Klerksdorp-Tshepong (NW) | 41 | 7 | 0 | 2 | 335 |
| Mapulaneng-Matikwana (MP) | 52 | 1 | 0 | 0 | 235 |
| Mitchell's Plain (WC) | 19 | 40 | 0 | 0 | 167 |
| Red Cross (WC) | 50 | 163 | 3 | 3 | 525 |
| Total: | 382 | 269 | 5 | 8 | 2210 |

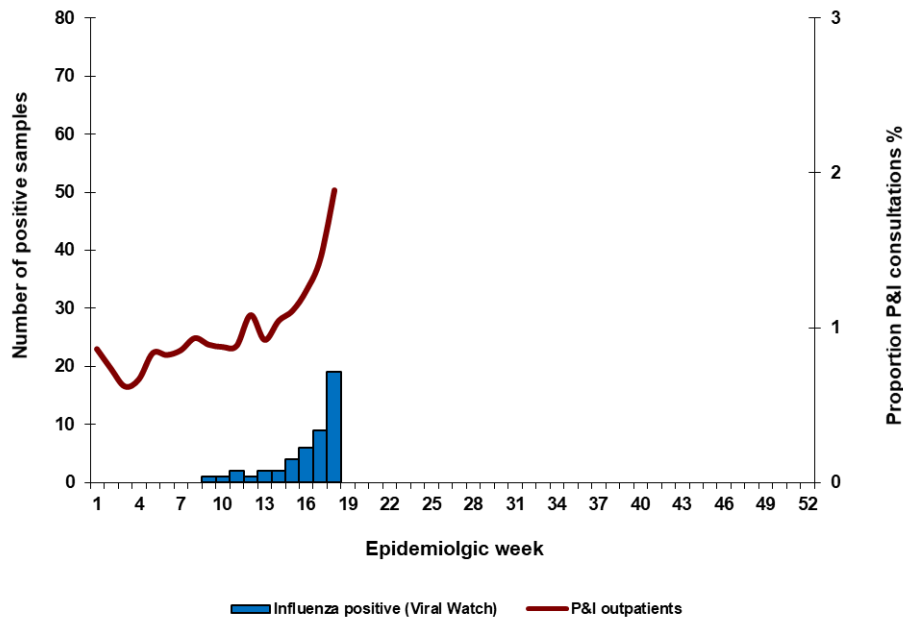
GP: Gauteng; KZ: KwaZulu-Natal; NW: North West; MP: Mpumalanga; WC: Western Cape

Inconclusive: insufficient viral load in sample and unable to characterise further

RSV AB: Both RSV A and B subgroup identified

Private hospital consultations

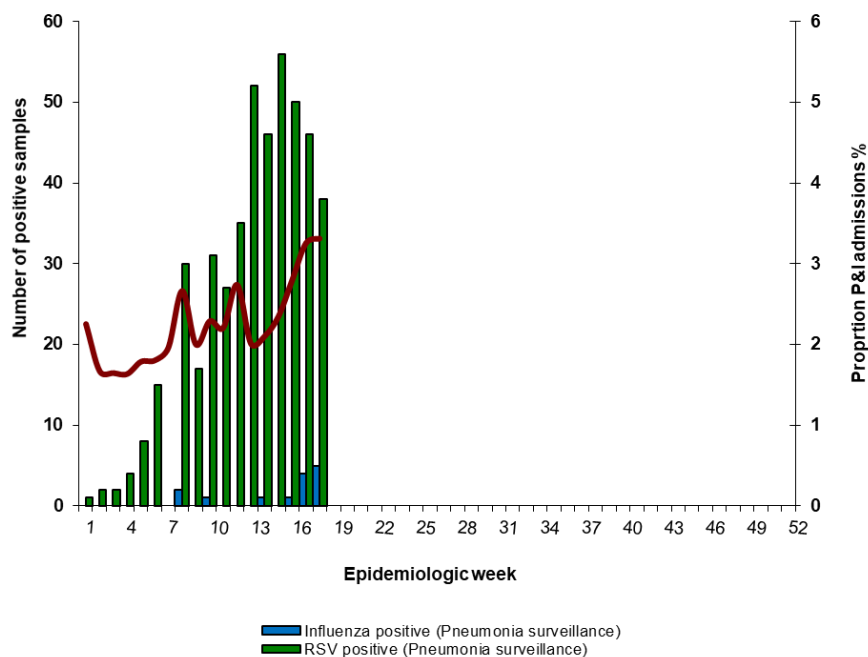
Figure 9. Number of private hospital outpatient consultations* with a diagnosis of pneumonia and influenza (P&I) and viral isolates**



* Hospital outpatient data from weekly reports of consultations to the Netcare hospital group. Discharge diagnosis is according to International Statistical Classification of Diseases and Related Health Problems coding by clinicians and does not represent laboratory confirmation of aetiology

** Influenza positive specimens from the Viral Watch surveillance programme

Figure 10. Number of private hospital admissions* with a discharge diagnosis of pneumonia and influenza (P&I) and viral isolates**



*Hospitalisation admission data from weekly reports of consultations to the Netcare hospital group. Discharge diagnosis is according to International Statistical Classification of diseases and Related Health Problems/ ICD by clinicians and does not represent laboratory confirmation of aetiology ** Influenza positive specimens from the national syndromic surveillance for pneumonia.