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# 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
<b>Start year</b>	2012	1984	2009	2002
<b>Provinces*</b>	KZ NW WC**	EC FS GP LP MP NW WC	GP KZ MP NW WC	EC FS GP LP MP NW WC
<b>Type of site</b>	Primary health care clinics	General practitioners	Public hospitals	Private hospitals
<b>Case definition</b>	An acute respiratory illness with a temperature ( $\geq 38^{\circ}\text{C}$ ) and cough, & onset $\leq 10$ days	An acute respiratory illness with a temperature ( $\geq 38^{\circ}\text{C}$ ) and cough, & onset $\leq 10$ days	Acute or chronic lower respiratory tract infection	ICD codes J10-J18
<b>Specimens collected</b>	Oropharyngeal & nasopharyngeal swabs	Throat and/or nasal swabs or Nasopharyngeal swabs	Oropharyngeal & nasopharyngeal swabs	Not applicable
<b>Main pathogens tested***</b>	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; 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 08/09/2019

Results until end of epidemiologic week 36 (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. The season ended in week 33 after which the transmission dropped below seasonal threshold levels.

ILI programme: In 2019 to date, specimens from 1319 patients were received from 4 ILI sites. Influenza was detected in 152 specimens, 23(15%) were identified as influenza A(H1N1)pdm09, 126 (83%) as influenza A(H3N2), and three (2%) influenza A subtype inconclusive.

Viral Watch programme: During the same period, specimens were received from 1288 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 762 patients, of which 37(5%) were influenza A(H1N1)pdm09, 706 (93%) influenza A(H3N2), 15(2%) influenza A subtyping inconclusive, and one influenza B Victoria. In addition two specimens were dual positive for influenza, one was influenza A(H1N1)pdm09 & influenza A(H3N2) in week 25 and another influenza A(H3N2) & influenza B Yamagata in week 27.

Pneumonia surveillance: In this time period, specimens from 3218 patients with severe respiratory illness (SRI) were received from the 6 sentinel sites. Influenza was detected in 214 patients, influenza A(H1N1)pdm09 in 13(6%), influenza A(H3N2) in 191(89%), seven (3%) influenza A subtype inconclusive, one influenza B(Victoria) and one influenza B(Yamagata). This includes one dual positive for influenza A(H1N1)pdm09 and A(H3N2) in week 21.

### 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, ended in week 25 (week ending 23 June). However, sporadic detections of RSV continue to be made.

In 2019 to date, RSV has been detected in the specimens of 142 patients in the ILI programme, 667 patients in the pneumonia surveillance programme and in 28 patients in the Viral Watch programme.

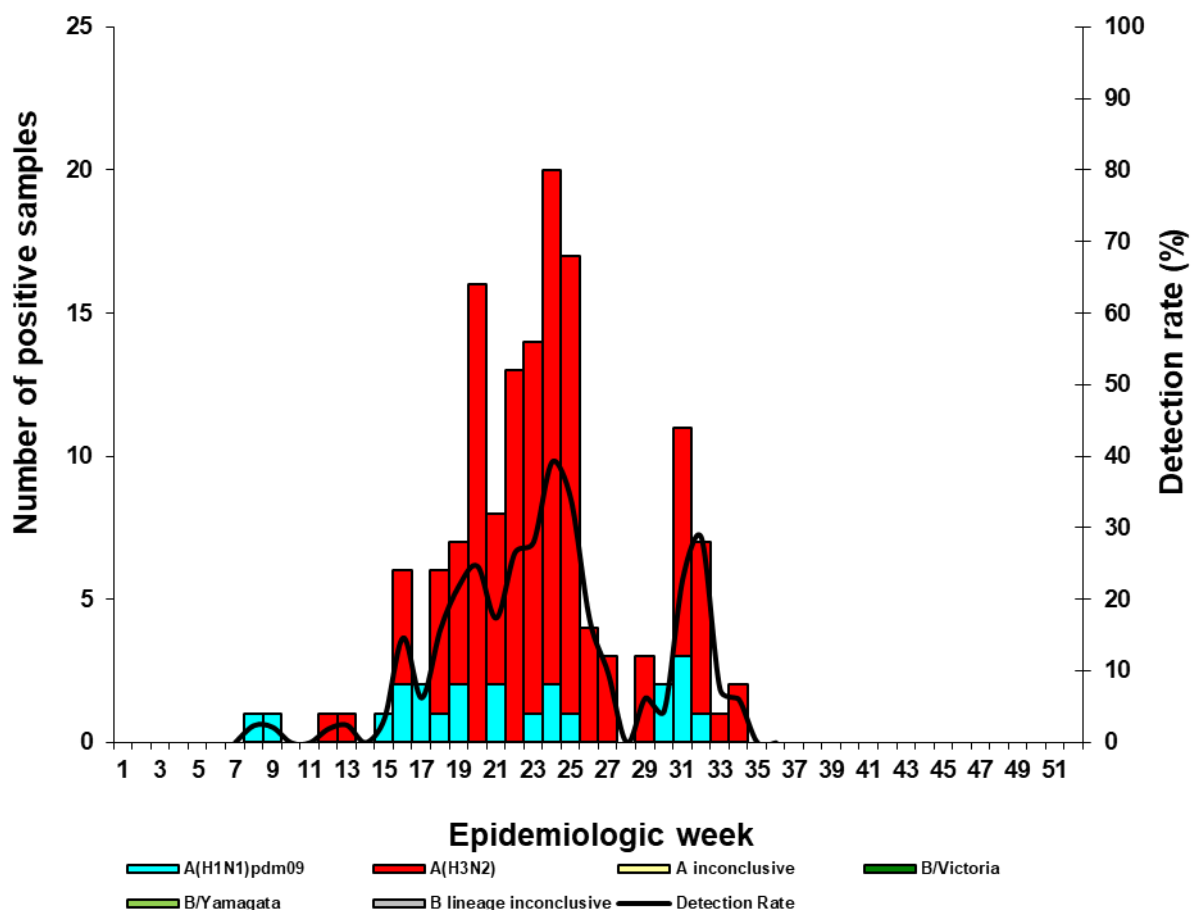
# Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

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## 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 4 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)	16	55	0	0	0	0	691
Edendale	3	22	3	0	0	0	103
Gateway (KZ)							
Jouberton (NW)	2	44	0	0	0	0	435
Mitchell's Plain (WC)	2	5	0	0	0	0	90
<b>Total:</b>	<b>23</b>	<b>126</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1319</b>

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

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

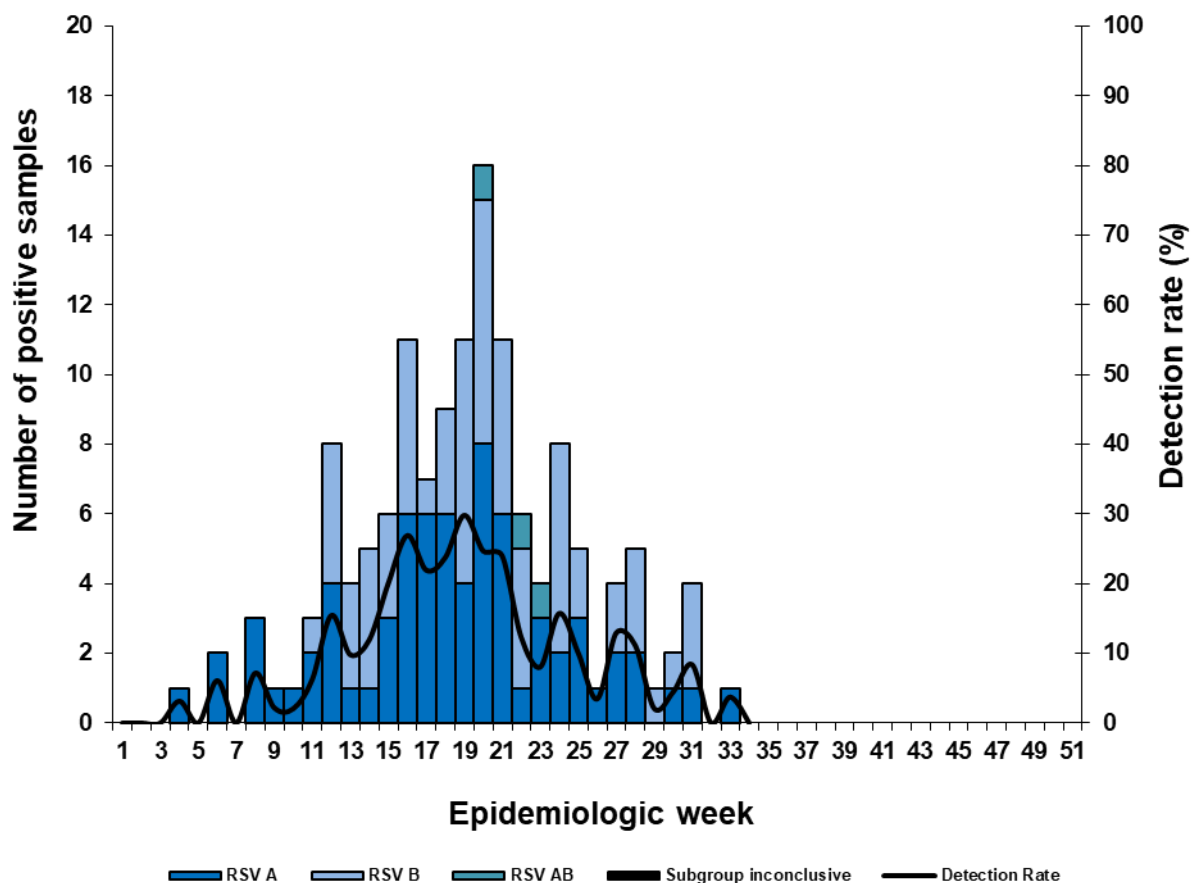
# Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

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## 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)	28	64	2	0	691
Edendale Gateway (KZ)	5	0	0	0	103
Jouberton (NW)	37	0	1	0	435
Mitchell's Plain (WC)		5	0	0	90
<b>Total</b>	<b>70</b>	<b>69</b>	<b>3</b>	<b>0</b>	<b>1319</b>

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

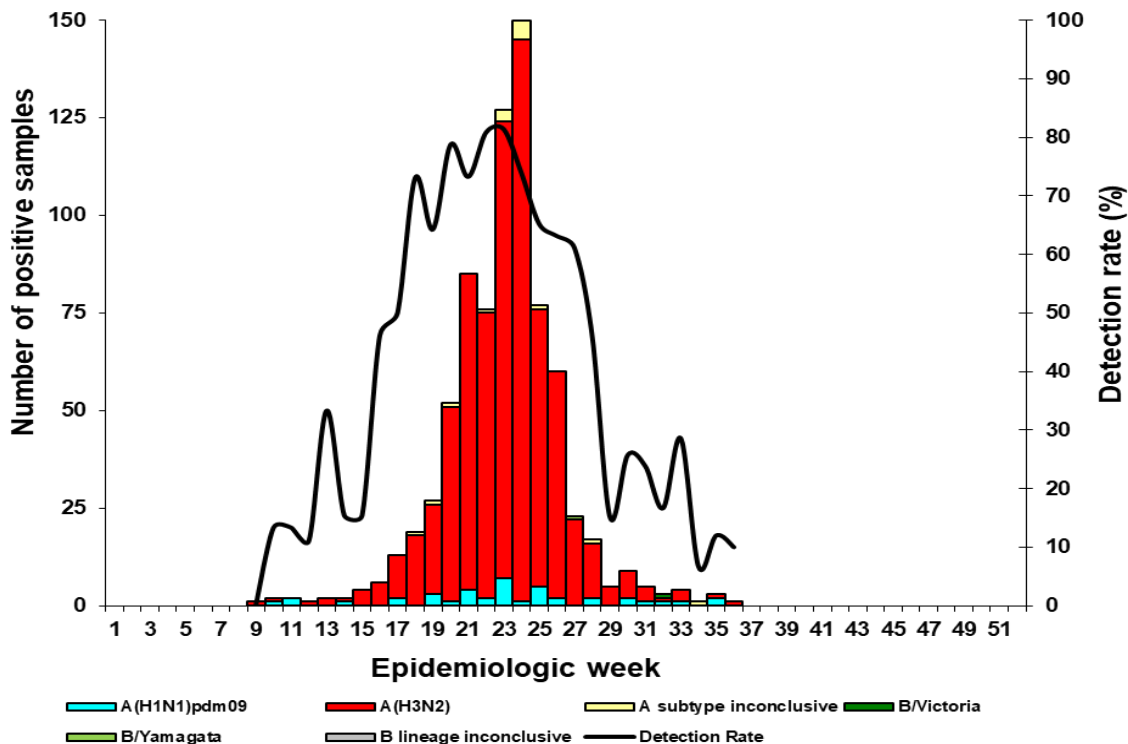
# Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

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## Influenza-like illness (ILI) surveillance Viral Watch

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



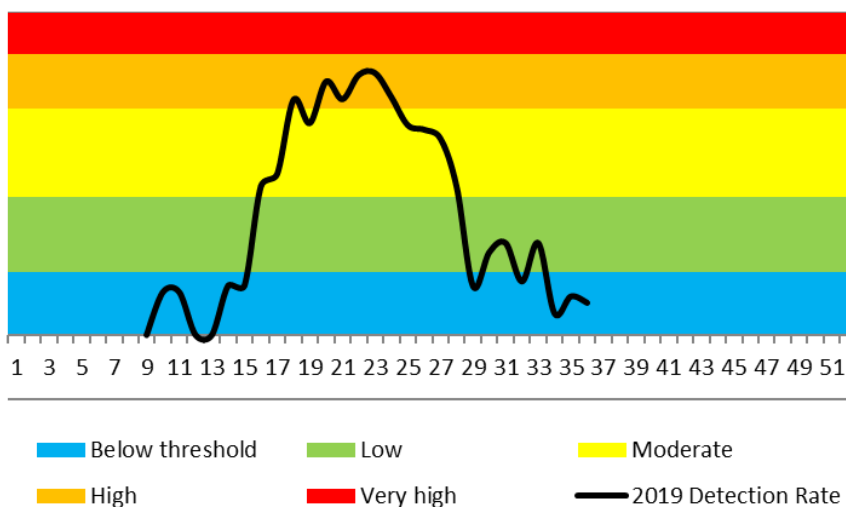
\*Specimens from patients with Influenza-like illnesses at 91 sentinel sites in 7 provinces

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

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

Dual positives are included in the graph cumulatively

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

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Results until end of epidemiologic week 36(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	2	48	3	0	0	0	67
Free State	0	53	0	0	0	0	74
Gauteng	11	373	8	0	1	0	653
Limpopo	2	31	0	0	0	0	48
Mpumalanga	5	28	1	0	0	0	76
North West	0	4	0	0	0	0	8
Western Cape	25	177	3	1	0	0	362
<b>Total:</b>	<b>45</b>	<b>714</b>	<b>15</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1288</b>

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

Included in the table are 2 dual specimens positive for influenza A(H1N1)pdm01 & influenza A(H3N2) in week25 and one dual positive for influenza A(H3N2) & influenza B(Yamagata) in week27

From 01 January 2019 to date, 35 patients were tested for influenza at the time of entry into South Africa following travel abroad and influenza was detected in five patients, of which one was influenza A(H1N1)pdm09 positive, two influenza A(H3N2), one influenza A(subtype inconclusive) and influenza B( lineage inconclusive).

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

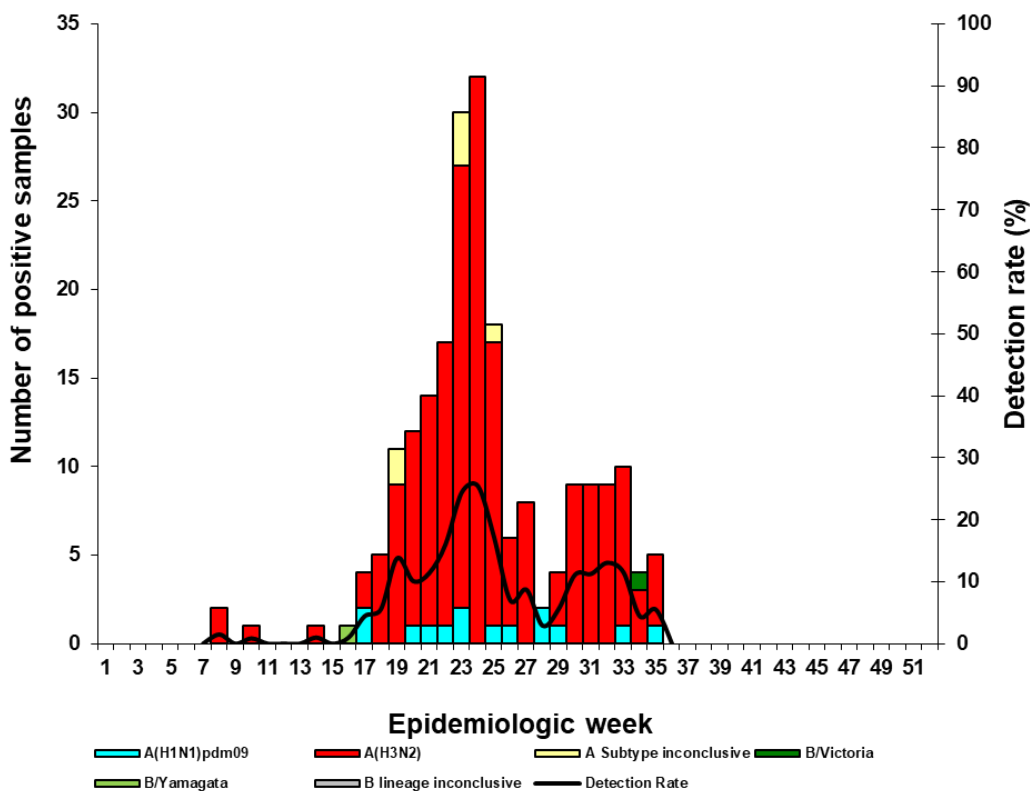
# Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

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## National syndromic surveillance for pneumonia

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



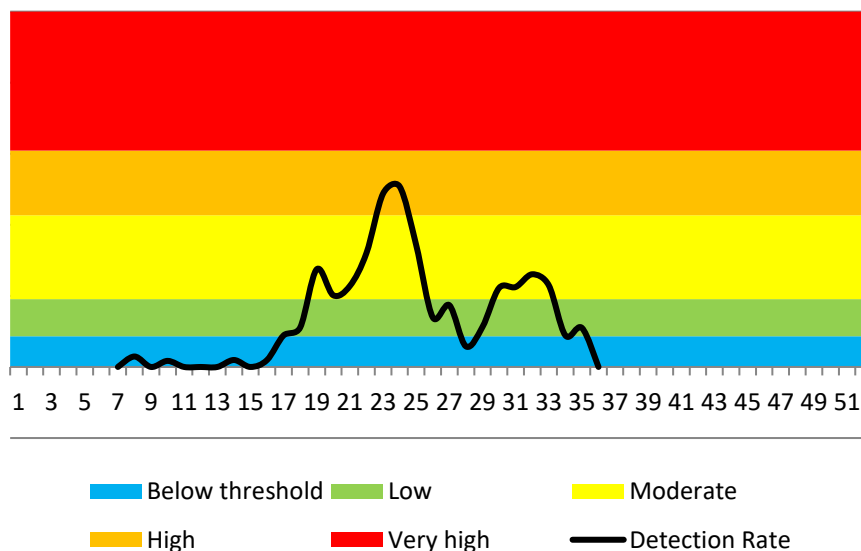
\*Specimens from patients hospitalised with pneumonia at 6 sentinel sites in 5 provinces

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

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

Dual positives are included in the graph cumulatively

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 08/09/2019

Results until end of epidemiologic week 36(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)	7	31	2	0	0	0	546
Helen Joseph-Rahima Moosa (GP)	0	36	2	0	1	0	764
Klerksdorp-Tshepong (NW)	0	50	0	0	0	0	481
Mapulaneng-Matikwana (MP)	2	28	0	1	0	0	334
Mitchell's Plain (WC)	2	15	2	0	0	0	270
Red Cross (WC)	3	32	1	0	0	0	823
<b>Total:</b>	<b>14</b>	<b>192</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>3218</b>

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

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

From the influenza positive specimens reflected on the above table we detected one dual specimen positive for influenza A(H1N1)pdm01 & influenza A(H3N2) in week21

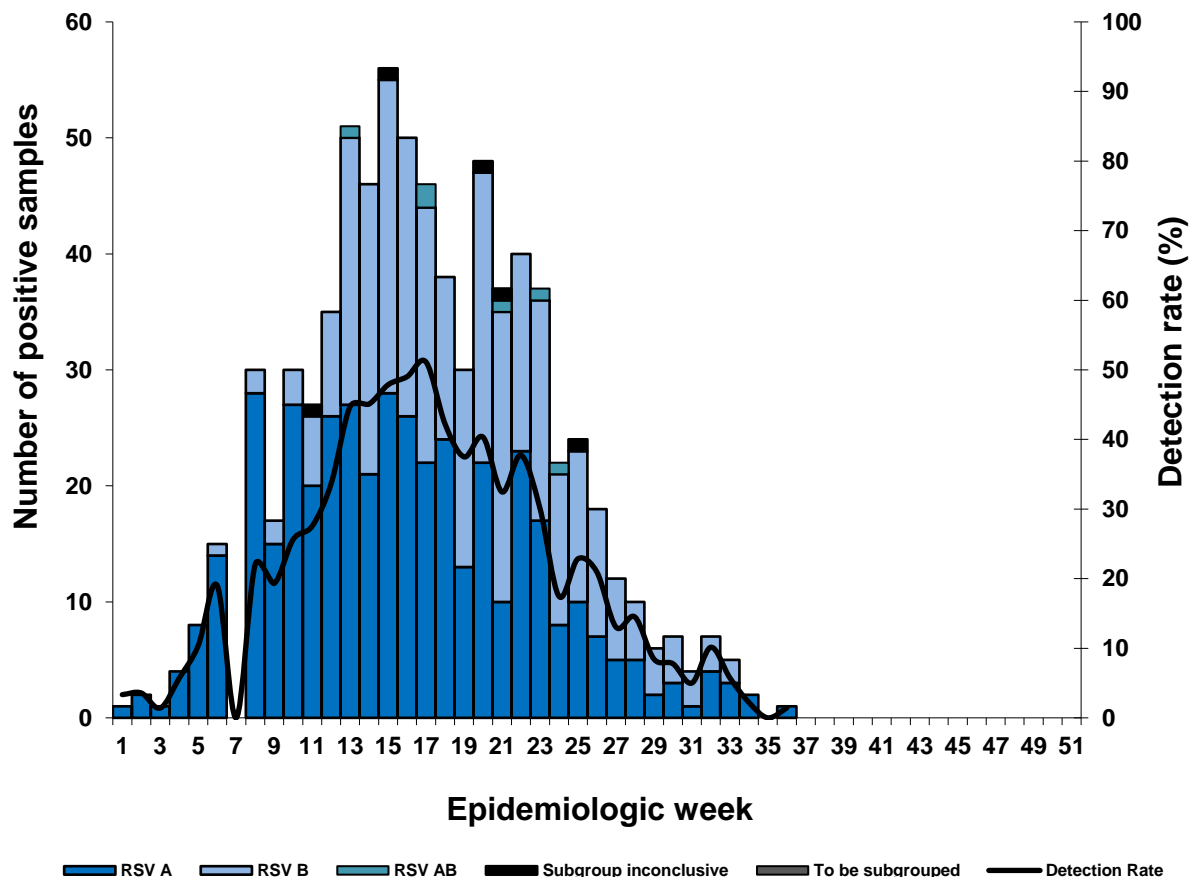
# Weekly Influenza and Respiratory Syncytial Virus Surveillance Report

Reporting period 01/01/2019 to 08/09/2019

Results until end of epidemiologic week 36(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	546
Helen Joseph-Rahima Moosa (GP)	99	53	2	2	764
Klerksdorp-Tshepong (NW)	41	7	0	2	481
Mapulaneng-Matikwana (MP)	52	1	0	0	334
Mitchell's Plain (WC)	19	40	0	0	270
Red Cross (WC)	50	163	3	3	823
<b>Total:</b>	<b>382</b>	<b>269</b>	<b>5</b>	<b>8</b>	<b>3218</b>

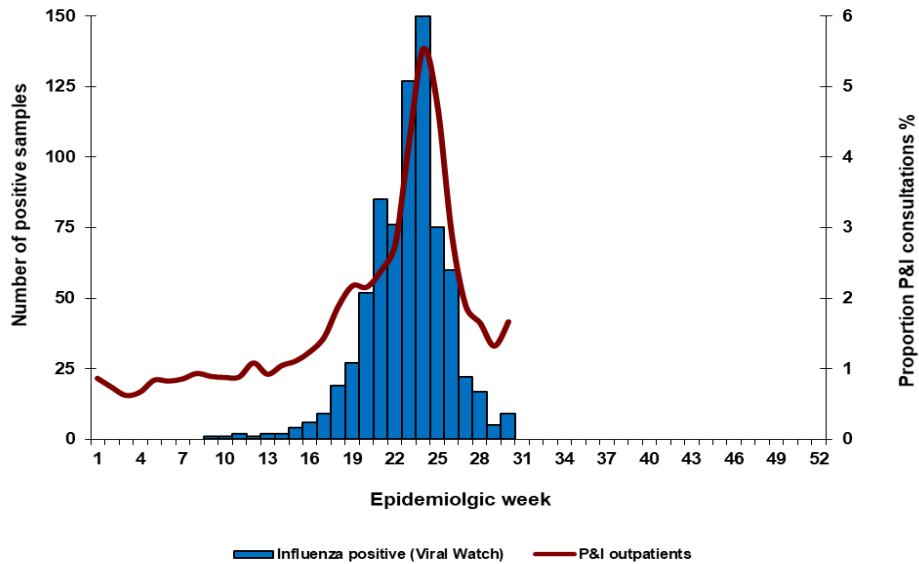
GP: Gauteng; KZ: KwaZulu-Natal; NW: North West; MP: Mpumalanga; WC: Western Cape

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

RSV AB: Both RSV A and B subgroup identified

## Private hospital consultations

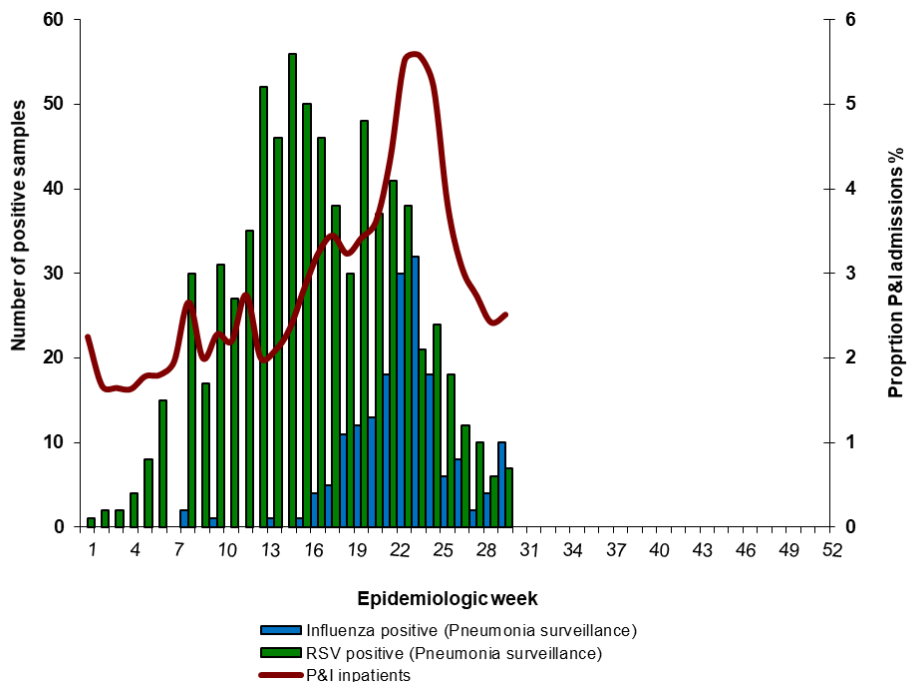
**Figure 9. Number of private hospital outpatient consultations\* with a diagnosis of pneumonia and influenza (P&I) and viral isolates\*\***



\* 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.