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# Respiratory Pathogen Surveillance

## Programme Descriptions

Programme	ILI	Viral Watch	National syndromic surveillance for pneumonia	Private hospital consultations
<b>Start year</b>	2012	1984	2009	2002
<b>Provinces*</b>	KZ NW MP	EC FS KZ GP LP MP NC 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>	$\geq 5$ years of age: oropharyngeal/nasopharyngeal swabs <5 years of age: nasopharyngeal aspirates	Throat and/or nasal swabs or Nasopharyngeal swabs	$\geq 5$ years of age: oropharyngeal/nasopharyngeal swabs <5 years of age: nasopharyngeal aspirates Induced/expectorated sputum	Not applicable
<b>Main pathogens tested**</b>	INF RSV BP	INF RSV BP	INF RSV SP*** BP	Not applicable

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

\*\*INF: Influenza; RSV: respiratory syncytial virus; BP: *Bordetella pertussis*

\*\*\* SP: *Streptococcus pneumoniae* children <1 year tested at KZ and all age groups tested at MP and NW

# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 01/07/2018

Results until end of epidemiologic week 26 (2018)

## Comments:

### Influenza

The 2018 influenza season continues. The season started in week 18 (first week of May), when influenza detections in the Viral Watch programme rose above the seasonal threshold, as determined by the Moving Epidemic Method. Thresholds of activity for influenza transmission and impact are currently moderate.

ILI programme: In 2018 to date, specimens from 581 patients were received from 3 ILI sites. Influenza was detected in 67 specimens, all identified as influenza A(H1N1)pdm09.

Viral Watch programme: During the same period, specimens from 738 patients were received from Viral Watch sites. Since April, when the number of specimens received started to increase, influenza has been detected in 326 specimens, 316 of which were identified as influenza A(H1N1)pdm09, two influenza A(H3N2), seven as influenza B and one influenza A not typed.

In addition, before the start of this year's influenza season: influenza A(H1N1)pdm09 was detected in four, A(H3N2) in three, and influenza B in 14 patients, most of whom had a history of travel or contact with tourists.

Pneumonia surveillance: In this time period, specimens from 2562 patients with severe respiratory illness (SRI) were received from the 6 sentinel sites. Influenza was detected in 143 specimens of which 140 were identified as influenza A(H1N1)pdm09 and three as influenza B.

### Respiratory syncytial virus

The 2018 RSV season started in week 9 (week starting 26 February) when RSV detections in pneumonia surveillance rose above the seasonal threshold as determined by the Moving Epidemic Method, has ended although sporadic detections of RSV are still being made.

In 2018 to date, RSV has been detected in the specimens of 87 patients in the ILI programme, and 764 from patients in the pneumonia surveillance programme.

During the same period, 37 specimens from Viral Watch surveillance programme sites tested positive for RSV.

### *Streptococcus pneumoniae*

Pneumonia surveillance: From the 1<sup>st</sup> January 2018 to date, blood specimens from 915 patients from 3 sentinel sites were tested for *S. pneumoniae* which was detected in 31 (3.4 %) specimens.

### *Bordetella pertussis*

ILI programme: From 1<sup>st</sup> January 2018 to date, nasopharyngeal/oropharyngeal specimens were tested from 581 patients for *B. pertussis*, four (0.7%) tested positive.

Pneumonia surveillance: During the same period, sputa and/or nasopharyngeal specimens were tested from 2562 patients for *B. pertussis* which was detected in 37 (1.4 %) specimens.

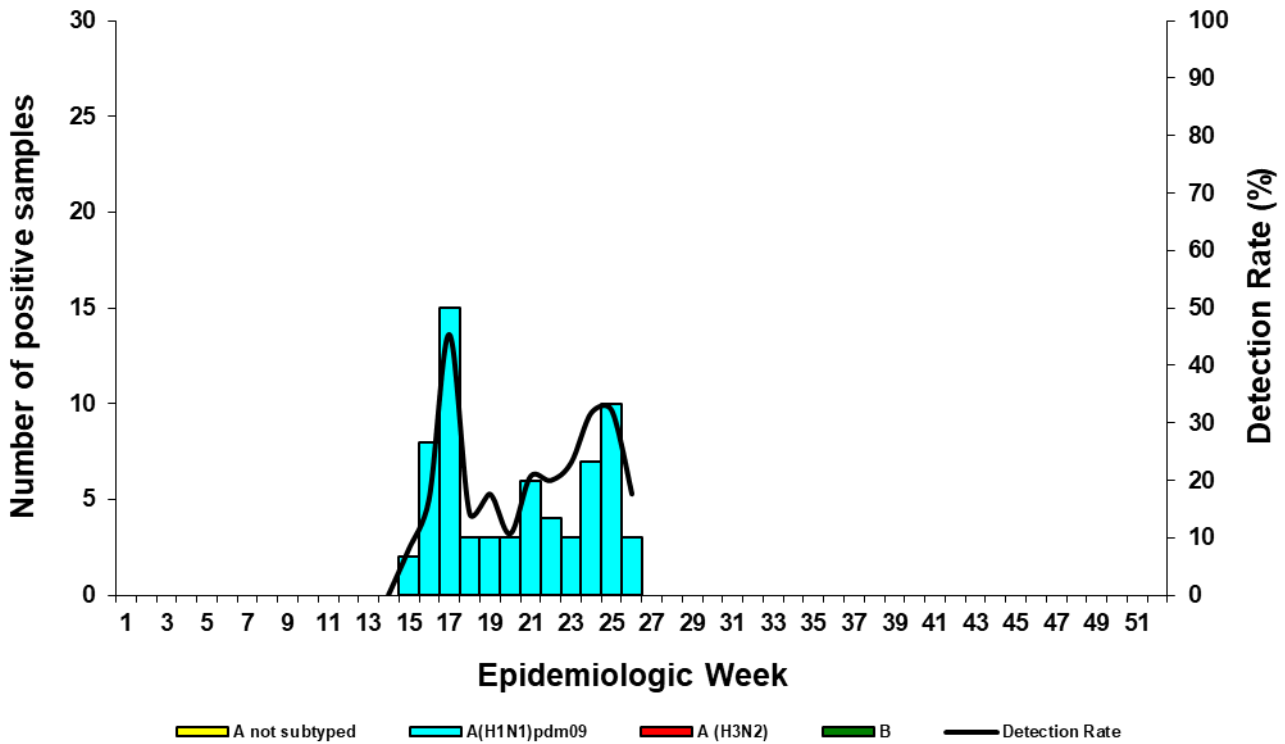
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 01/07/2018

Results until end of epidemiologic week 26 (2018)

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

**Figure 1. Number of positive samples\* by influenza types and subtypes 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

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

Clinic (Province)	A not typed as yet	A(H1N1)pdm09	A(H3N2)	B	Total samples
Agincourt Clinic (MP)		3			141
Edendale Gateway Clinic (KZ)		20			251
Jouberton Clinic (NW)		24			189
<b>Total:</b>	<b>0</b>	<b>67</b>	<b>0</b>	<b>0</b>	<b>581</b>

KZ: KwaZulu-Natal; NW: North West, MP: Mpumalanga

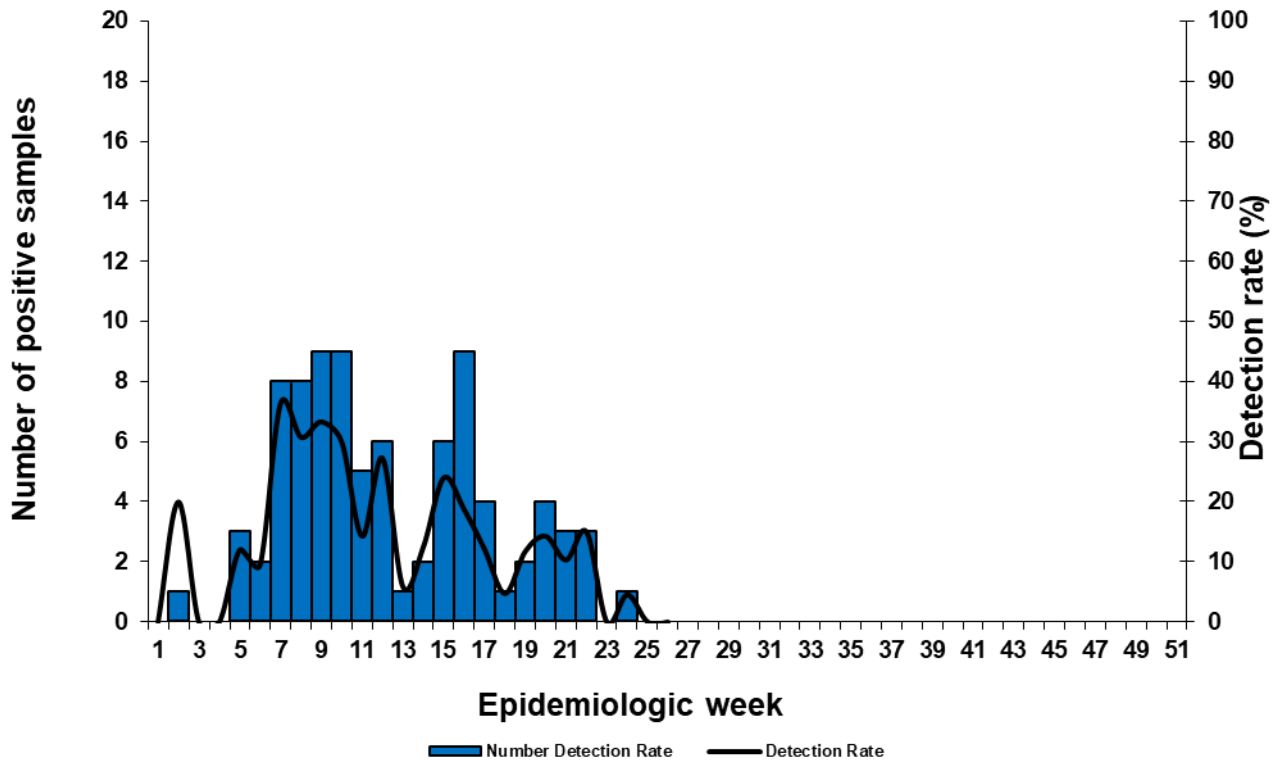
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 01/07/2018

Results until end of epidemiologic week 26 (2018)

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

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



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

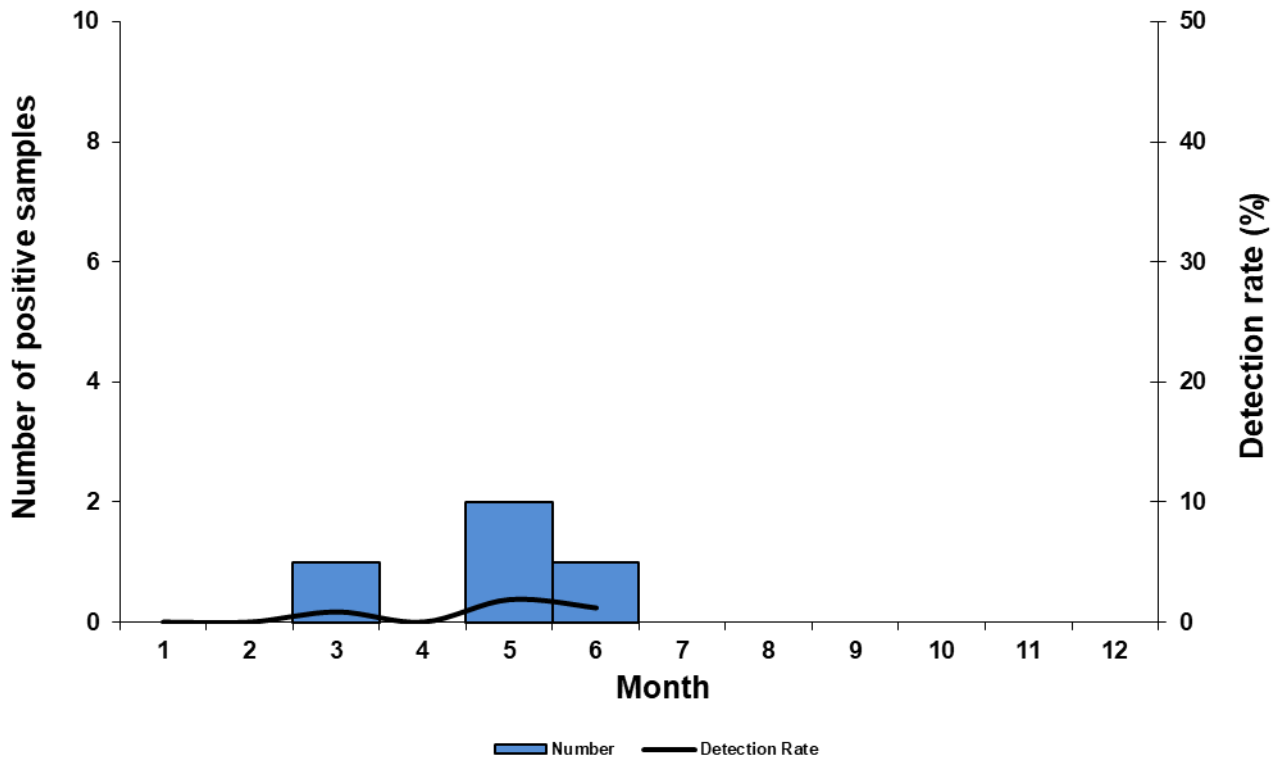
Clinic (Province)	RSV Positive	Total samples
Agincourt Clinic (MP)	38	141
Edendale Gateway Clinic (KZ)	27	251
Jouberton Clinic (NW)	22	189
<b>Total:</b>	<b>87</b>	<b>581</b>

KZ: KwaZulu-Natal; NW: North West, MP: Mpumalanga

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

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**Figure 3. Number of samples testing positive for *B. pertussis* and detection rate by month**



**Table 3 Cumulative number of *B. pertussis* identified and total number of samples tested by province**

Clinic (Province)	<i>B. pertussis</i> Positive	Total samples
Agincourt Clinic (MP)		141
Edendale Gateway Clinic (KZ)	1	251
Jouberton Clinic (NW)	3	189
Total:	4	581

KZ: KwaZulu-Natal; NW: North West, MP: Mpumalanga

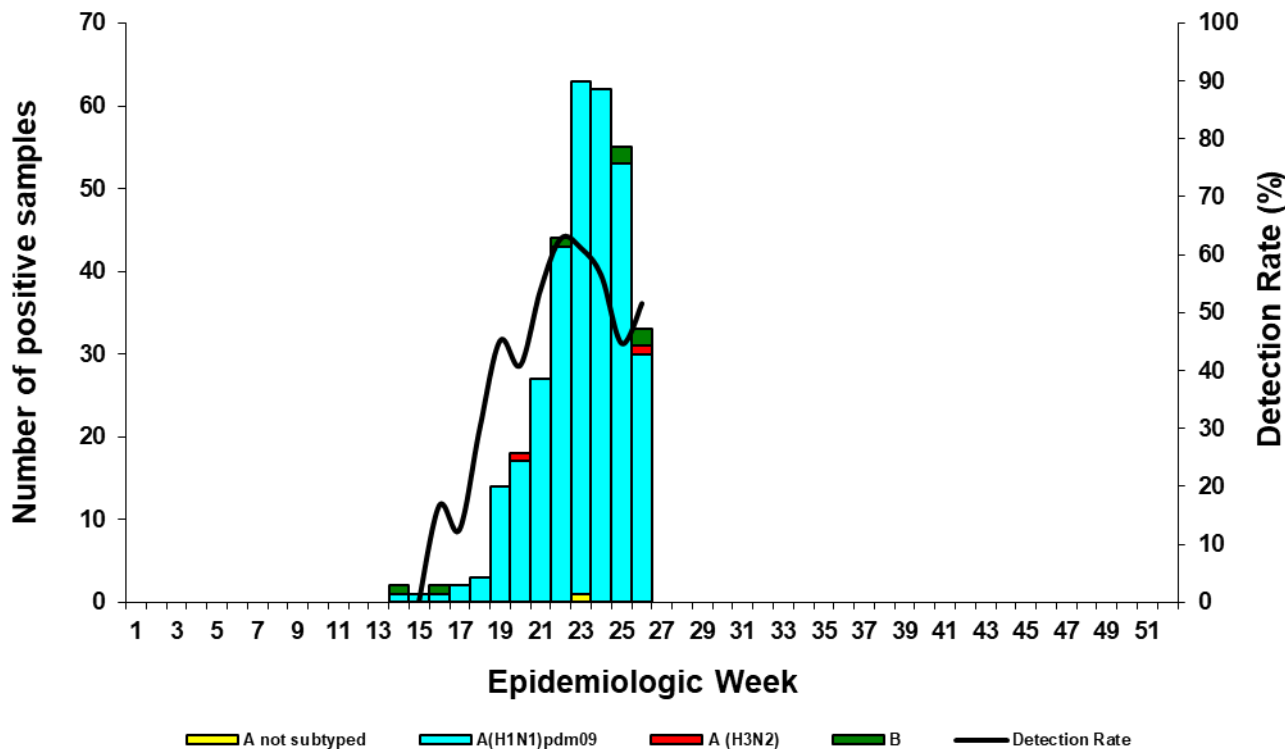
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 01/07/2018

Results until end of epidemiologic week 26 (2018)

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

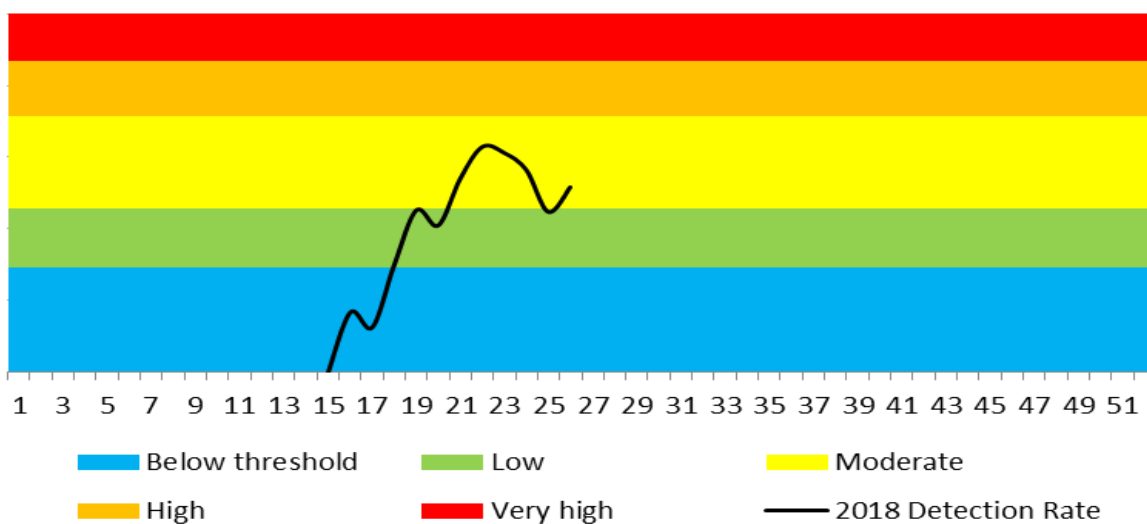
**Figure 4. Number of positive samples\* by influenza types and subtypes and detection rate\*\* by week**



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

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

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



\*Thresholds based on 2007-20017 data (Excluding 2009)

## Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 01/07/2018

Results until end of epidemiologic week 26 (2018)

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

Province	A not subtyped	A(H1N1)pdm09	A(H3N2)	B	Total samples
Eastern Cape		44		1	65
Free State					6
Gauteng		182	2	3	406
Limpopo		14			20
Mpumalanga	1	18		2	65
North West		1			2
Northern Cape		2			10
Western Cape		55		1	164
<b>Total:</b>	<b>1</b>	<b>316</b>	<b>2</b>	<b>7</b>	<b>738</b>

From 01 January 2018 to date, 78 patients were tested for influenza at the time of entry into South Africa following travel abroad and 24 have tested influenza positive.

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



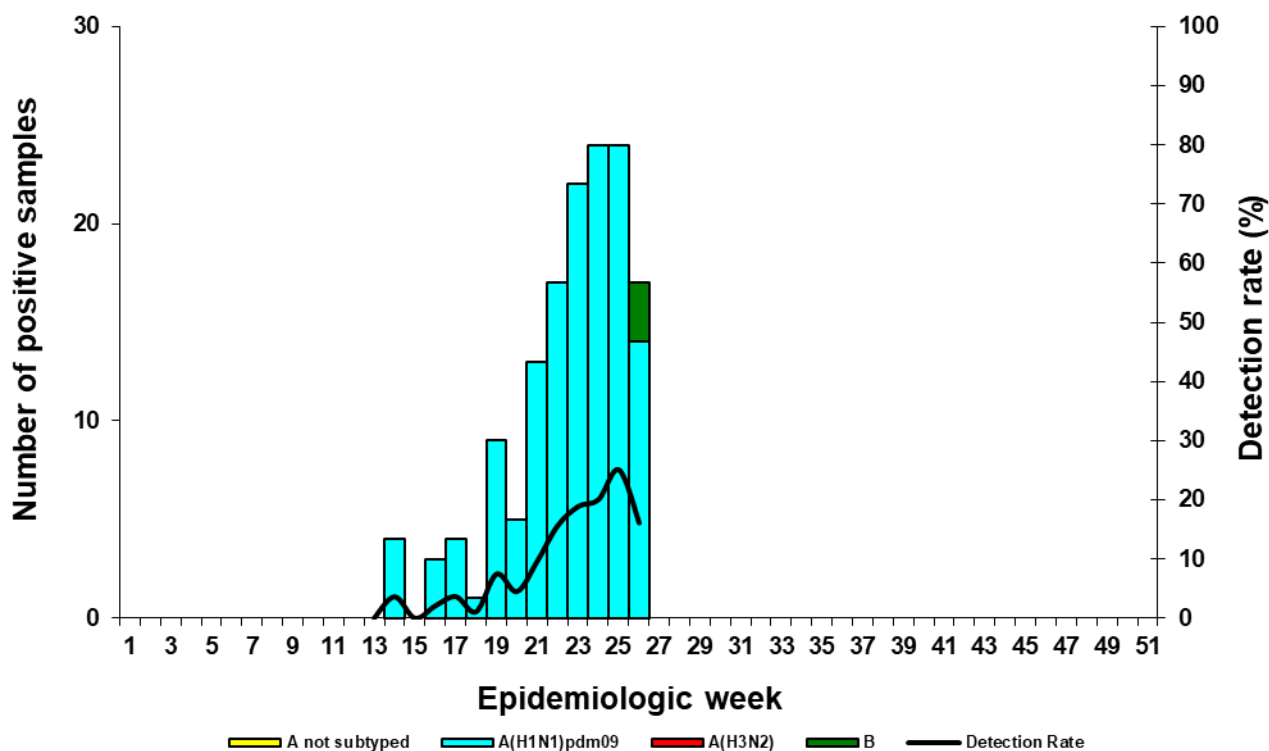
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 01/07/2018

Results until end of epidemiologic week 26 (2018)

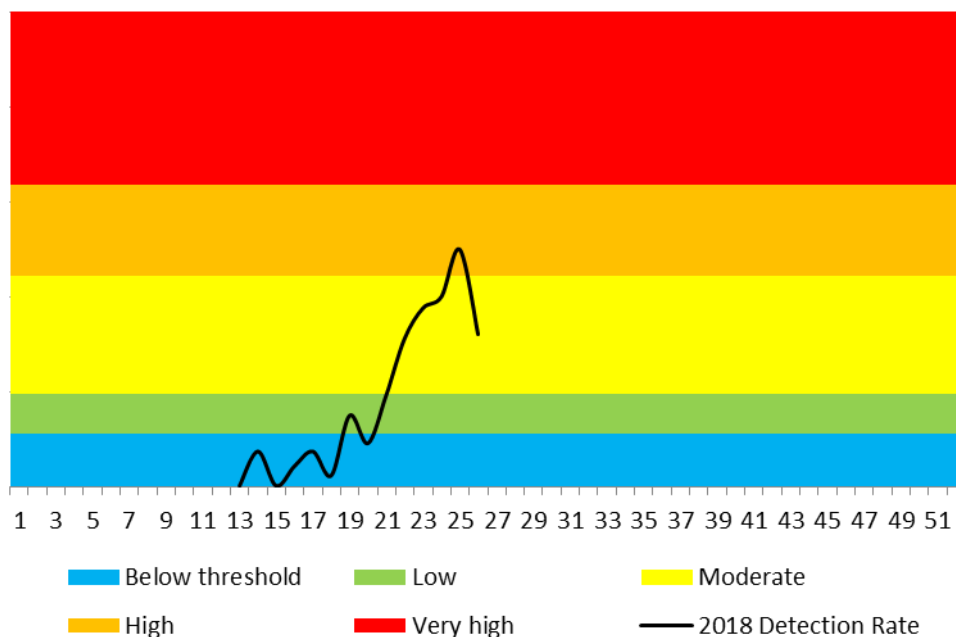
## National syndromic surveillance for pneumonia

**Figure 6. Number of positive samples\* by influenza types and A not typed as yet 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

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



\*Thresholds based on 2010-2017 data

## Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 01/07/2018

Results until end of epidemiologic week 26 (2018)

**Table 5. Cumulative number of identified influenza types and subtypes and total number of samples tested by hospital**

Hospital (Province)	A not typed as yet	A(H1N1)pdm09	A(H3N2)	B	Total samples
Edendale (KZ)		29			412
Helen Joseph-Rahima Moosa (GP)		36		1	608
Klerksdorp-Tshepong (NW)		6			360
Mapulaneng-Matikwana (MP)		22			143
Red Cross (WC)		26		2	677
Mitchell's Plain (WC)		21			362
<b>Total:</b>		<b>140</b>	<b>0</b>	<b>3</b>	<b>2562</b>

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

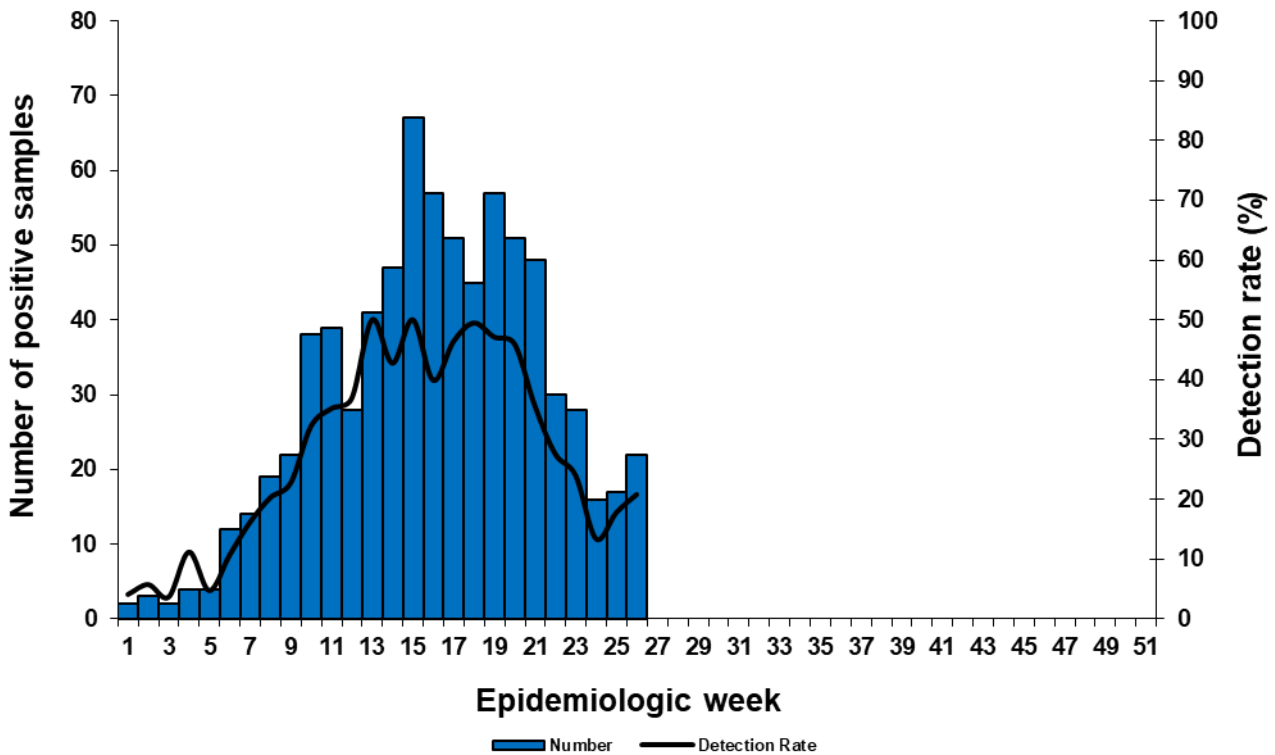
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 01/07/2018

Results until end of epidemiologic week 26 (2018)

## National syndromic surveillance for pneumonia

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



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

Hospital (Province)	RSV Positive	Total samples
Edendale (KZ)	76	412
Helen Joseph-Rahima Moosa (GP)	162	608
Klerksdorp-Tshepong (NW)	40	360
Mapulaneng-Matikwana (MP)	45	143
Red Cross (WC)	306	677
Mitchell's Plain (WC)	135	362
<b>Total:</b>	<b>764</b>	<b>2562</b>

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

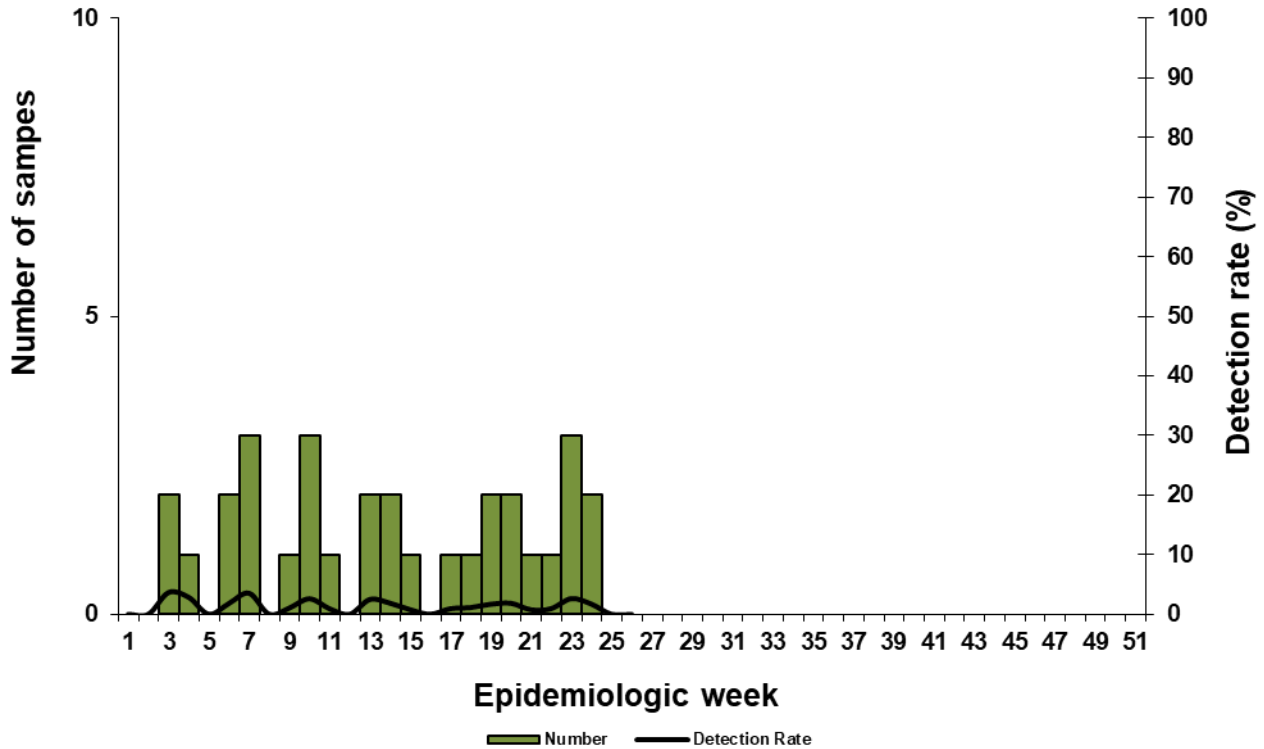
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 01/07/2018

Results until end of epidemiologic week 26 (2018)

## National syndromic surveillance for pneumonia

**Figure 9. Number of samples testing positive for *S. pneumoniae*\* and detection rate by week**



**Table 7. Cumulative number of *S. pneumoniae* identified and total number of samples tested by hospital and province**

Hospital (Province)	<i>S. pneumoniae</i> Positive	Total samples
Edendale (KZ)	3	412
Klerksdorp-Tshepong (NW)	17	360
Mapulaneng-Matikwana (MP)	11	143
<b>Total:</b>	<b>31</b>	<b>915</b>

KZ: KwaZulu-Natal; NW: North West; MP: Mpumalanga;

\* Children <1 year tested at KZ and all age groups tested at MP and NW

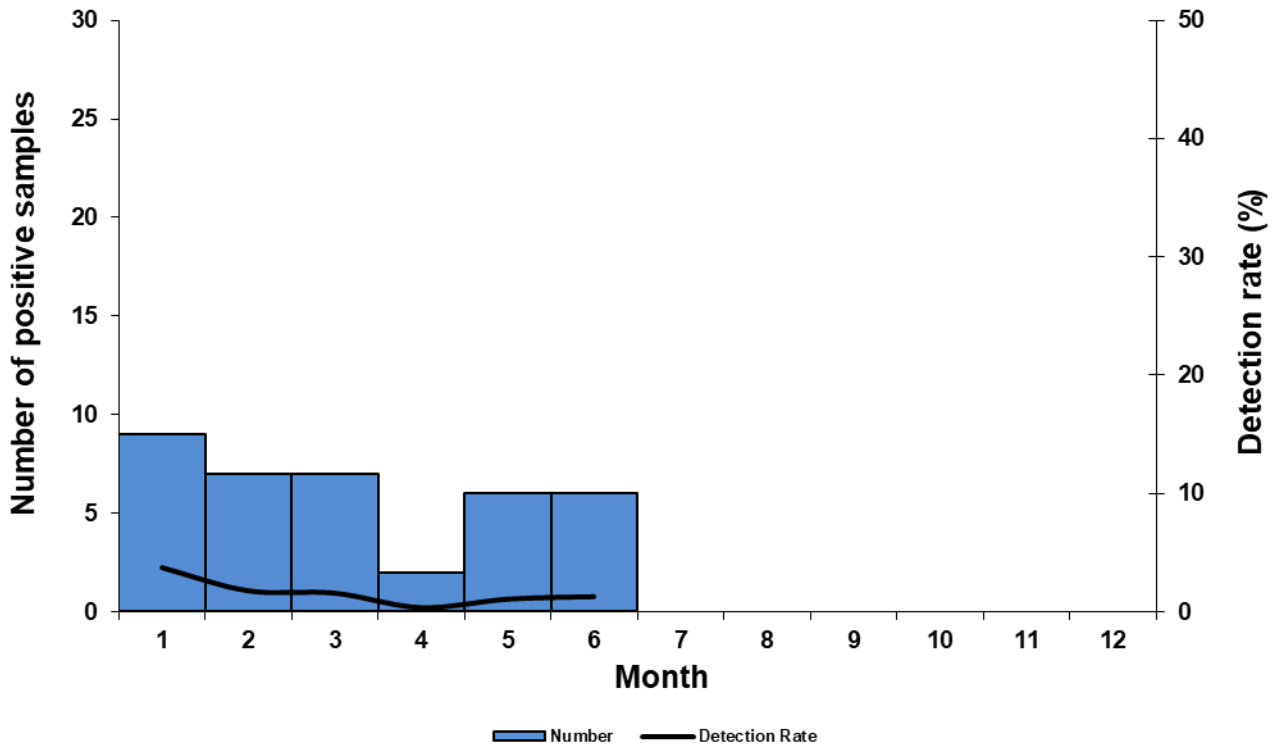
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 01/07/2018

Results until end of epidemiologic week 26 (2018)

## National syndromic surveillance for pneumonia

**Figure 10. Number of samples testing positive for *B. pertussis* and detection rate by month**



**Table 9. Cumulative number of *B. pertussis* identified and total number of samples tested by hospital and province**

Hospital (Province)	<i>B. pertussis</i> Positive	Total samples
Edendale (KZ)	5	412
Helen Joseph-Rahima Moosa (GP)	7	608
Klerksdorp-Tshepong (NW)	3	360
Mapulaneng-Matikwana (MP)	1	143
Red Cross (WC)	16	677
Mitchell's Plain (WC)	5	362
<b>Total:</b>	<b>37</b>	<b>2562</b>

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

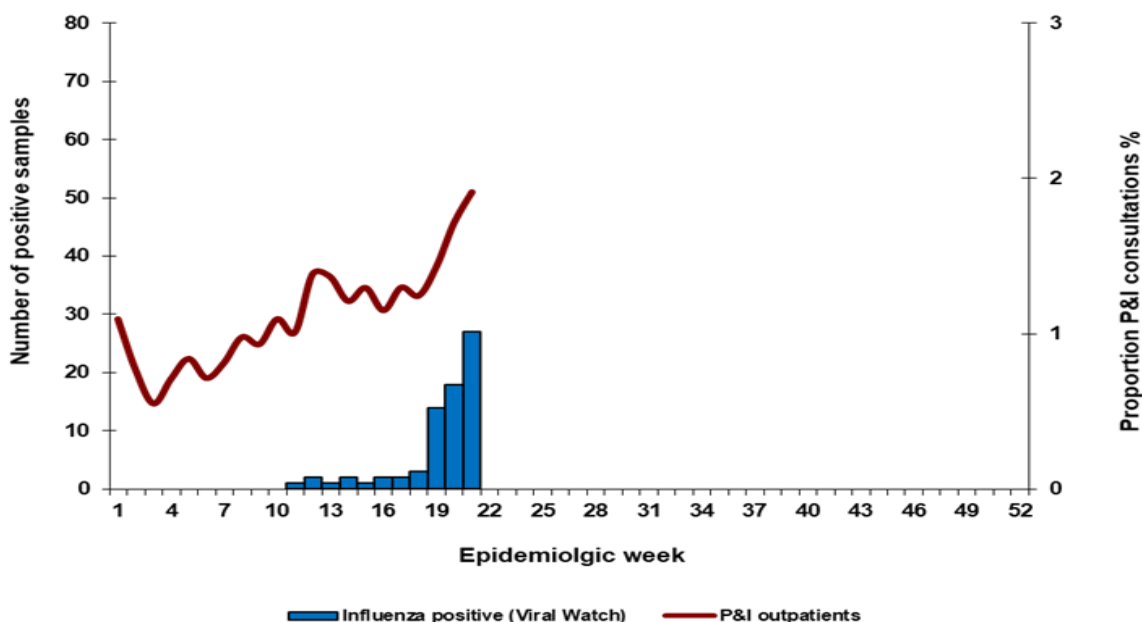
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 27/05/2018

Results until end of epidemiologic week 21 (2018)

## Private hospital consultations

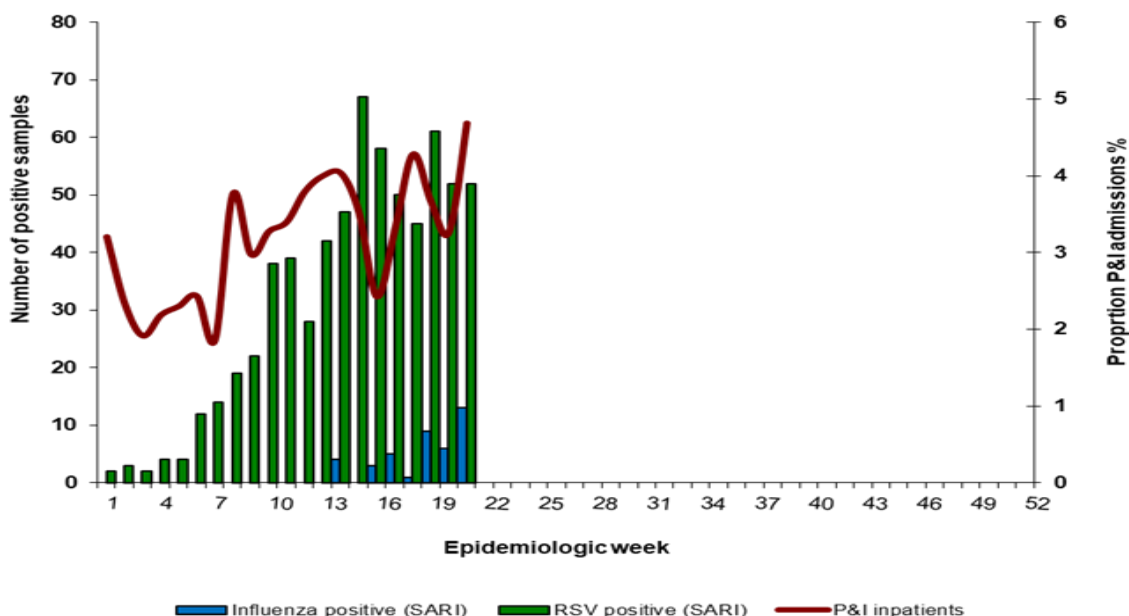
**Figure 11. Number of private hospital outpatient consultations\* with a diagnosis of pneumonia and influenza (P&I) and viral isolates\*\***



\* 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 12. 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.