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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 WC**	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>	Oropharyngeal & nasopharyngeal swabs	Throat and/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; NC: Northern Cape; NW: North West; WC: Western Cape

\*\*Started in 2019

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

# Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 07/04/2019

Results until end of epidemiologic week 13 (2019)

## Comments:

### Influenza

The 2018 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. The season ended in week 41 (second week of October).

The 2019 season has not yet started although sporadic detections of influenza have been made.

ILI programme: In 2019 to date, specimens from 392 patients were received from 3 ILI sites. Influenza was detected in 4 specimens, two were identified as influenza A(H1N1)pdm09 and another two as influenza A(H3N2).

Viral Watch programme: During the same period, specimens were received from 62 patients from Viral Watch sites. Influenza was detected in 8 patients, four each A(H1N1)pdm09 and A(H3N2). Of these, four gave a history of travel to the Northern Hemisphere.

Pneumonia surveillance: In this time period, specimens from 1053 patients with severe respiratory illness (SRI) were received from the 6 sentinel sites. Influenza A(H3N2) was detected in three specimens.

### 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 23 patients in the ILI programme, 221 patients in the pneumonia surveillance programme and in two patients in the Viral Watch programme.

### *Bordetella pertussis*

ILI programme: From 1<sup>st</sup> January 2019 to date, nasopharyngeal/oropharyngeal specimens were tested from 390 patients for *B. pertussis*, 3 (0.8%) tested positive.

Pneumonia surveillance: During the same period, nasopharyngeal specimens were tested from 1050 patients for *B. pertussis* which was detected in 17 (1.6%) specimens.

In addition *B. pertussis* was detected in 1 of 36 (2.8 %) specimens from patients who did not meet the pneumonia surveillance case definition, but who did meet the pertussis case definition.

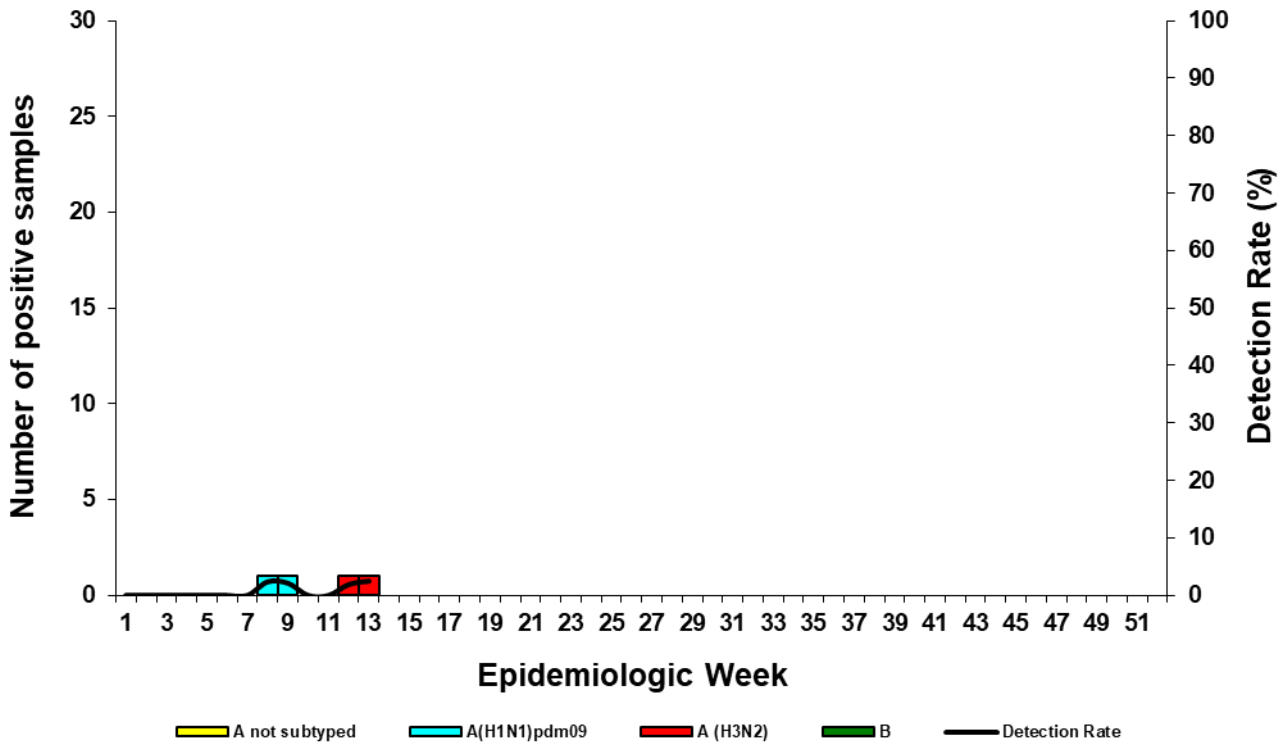
# Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 07/04/2019

Results until end of epidemiologic week 13 (2019)

## 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
Edendale Gateway Clinic (KZ)					22
Jouberton Clinic (NW)		1			116
Mitchell's Plain Clinic (WC)		1	2		254
<b>Total:</b>		2	2		392

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

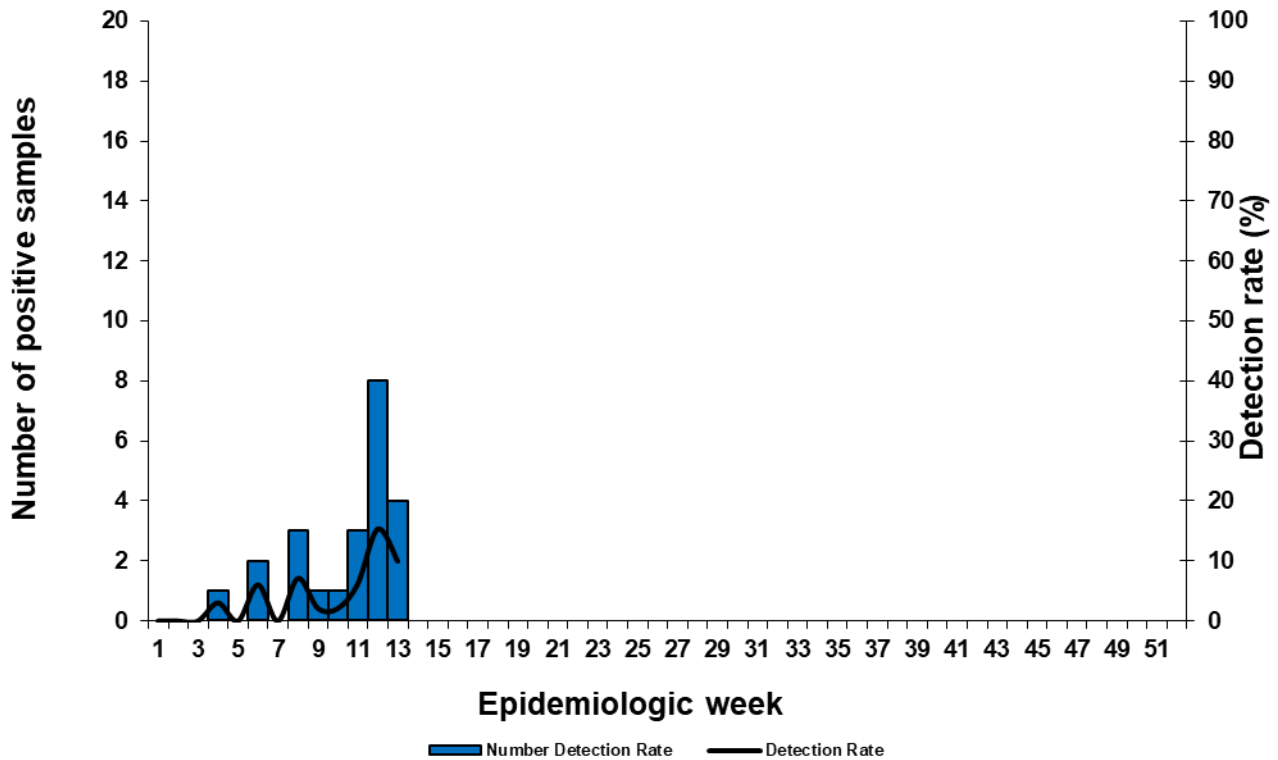
# Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 07/04/2019

Results until end of epidemiologic week 13 (2019)

## 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
Edendale Gateway Clinic (KZ)	4	22
Jouberton Clinic (NW)	3	116
Mitchell's Plain Clinic (WC)	16	254
<b>Total</b>	<b>23</b>	<b>392</b>

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

# Respiratory Pathogen Surveillance

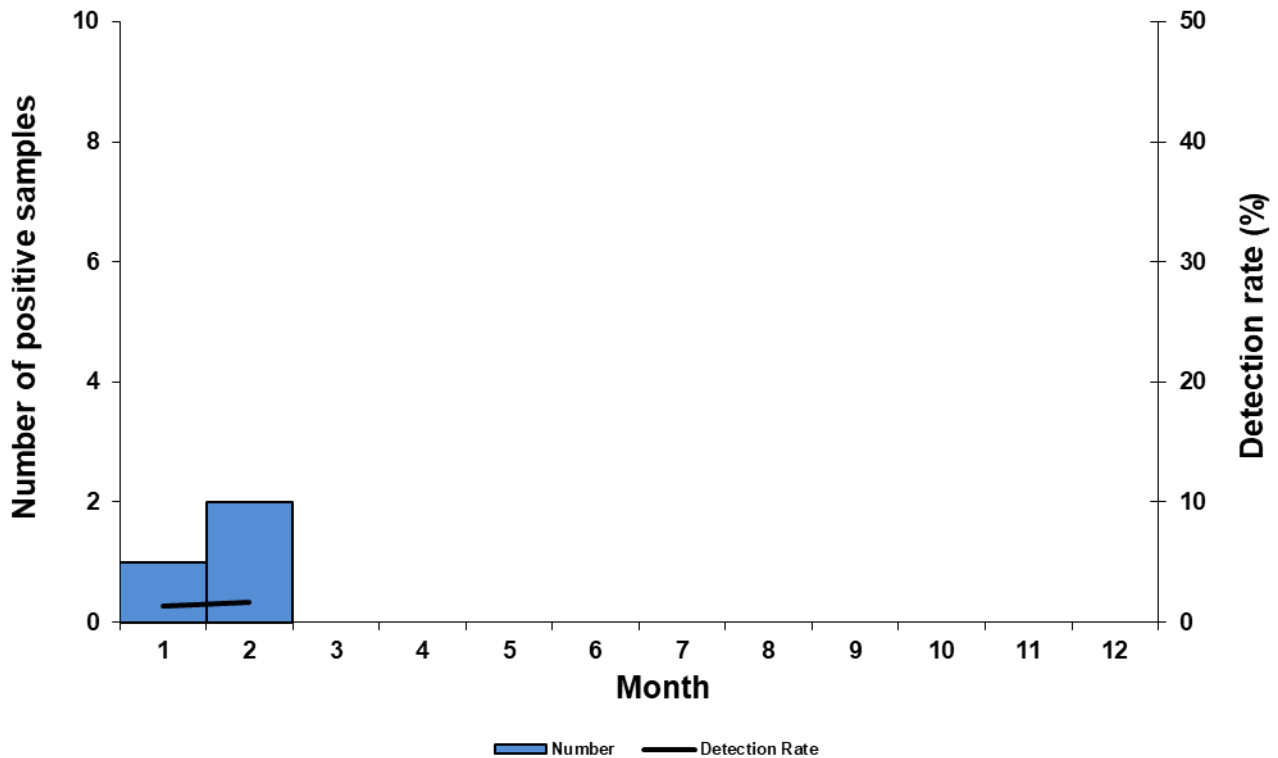
Reporting period 01/01/2019 to 07/04/2019

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## 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
Edendale Gateway Clinic (KZ)		22
Jouberton Clinic (NW)	2	115
Mitchell's Plain Clinic (WC)	1	253
Total:	3	390

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

\*\*All positive pertussis cases met the suspected pertussis case definition

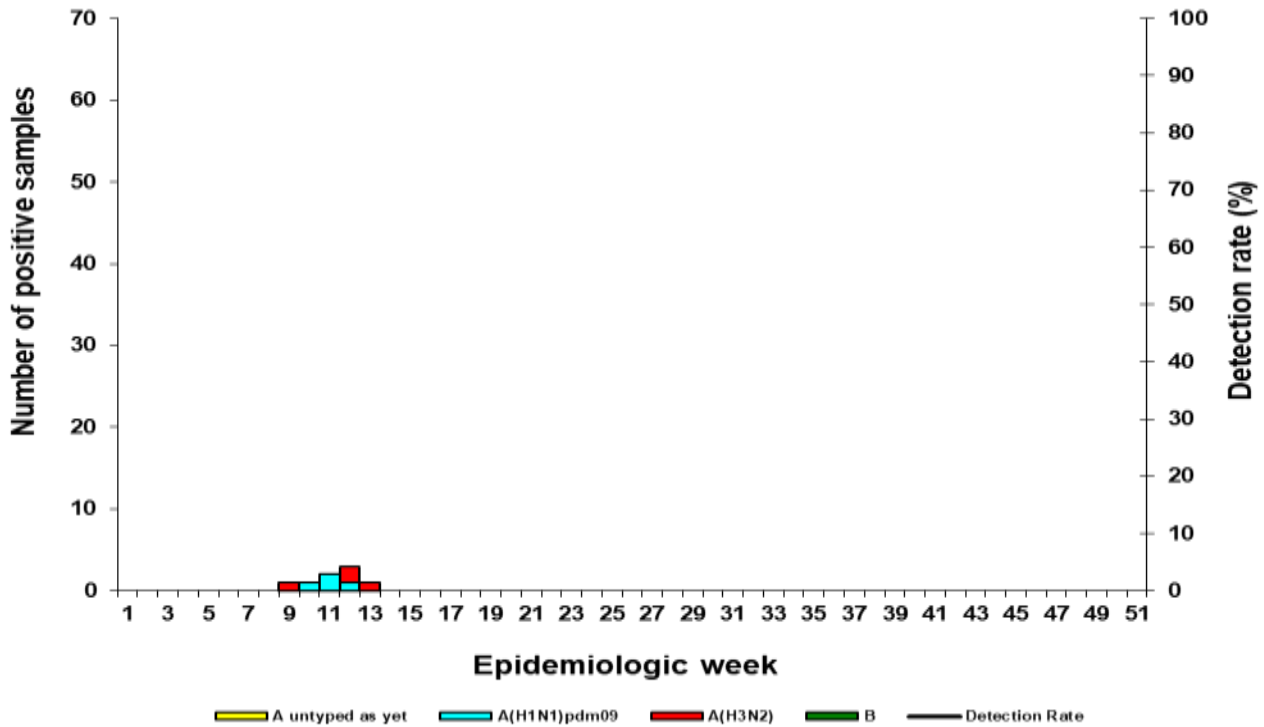
# Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 07/04/2019

Results until end of epidemiologic week 13 (2019)

## 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.

**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					2
Free State					1
Gauteng			3		32
Limpopo					1
Mpumalanga					4
North West					0
Northern Cape					0
Western Cape		4	1		22
<b>Total:</b>		4	4		62

From 01 January 2019 to date, 14 patients were tested for influenza at the time of entry into South Africa following travel abroad and 1 tested influenza A(H1N1)pdm09 positive.

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

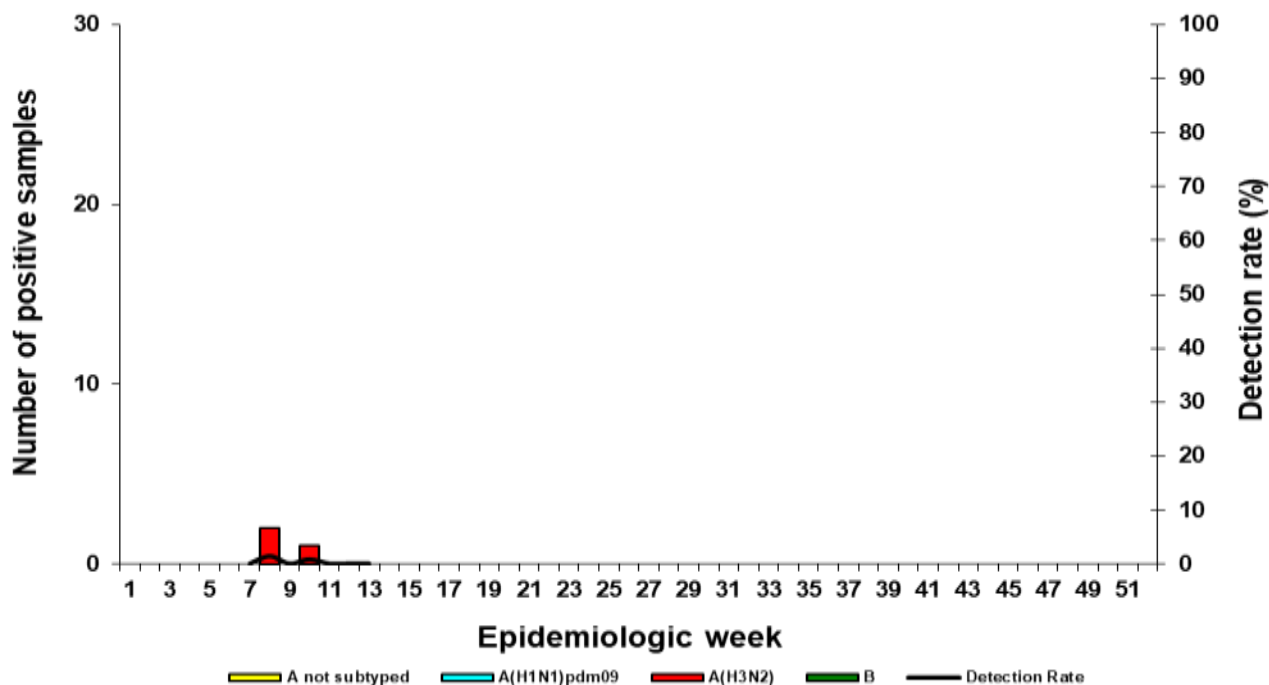
# Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 07/04/2019

Results until end of epidemiologic week 13 (2019)

## 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

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)					274
Helen Joseph-Rahima Moosa (GP)					255
Klerksdorp-Tshepong (NW)					126
Mapulaneng-Matikwana (MP)			1		113
Red Cross (WC)			2		215
Mitchell's Plain (WC)					70
<b>Total:</b>			<b>3</b>		<b>1053</b>

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



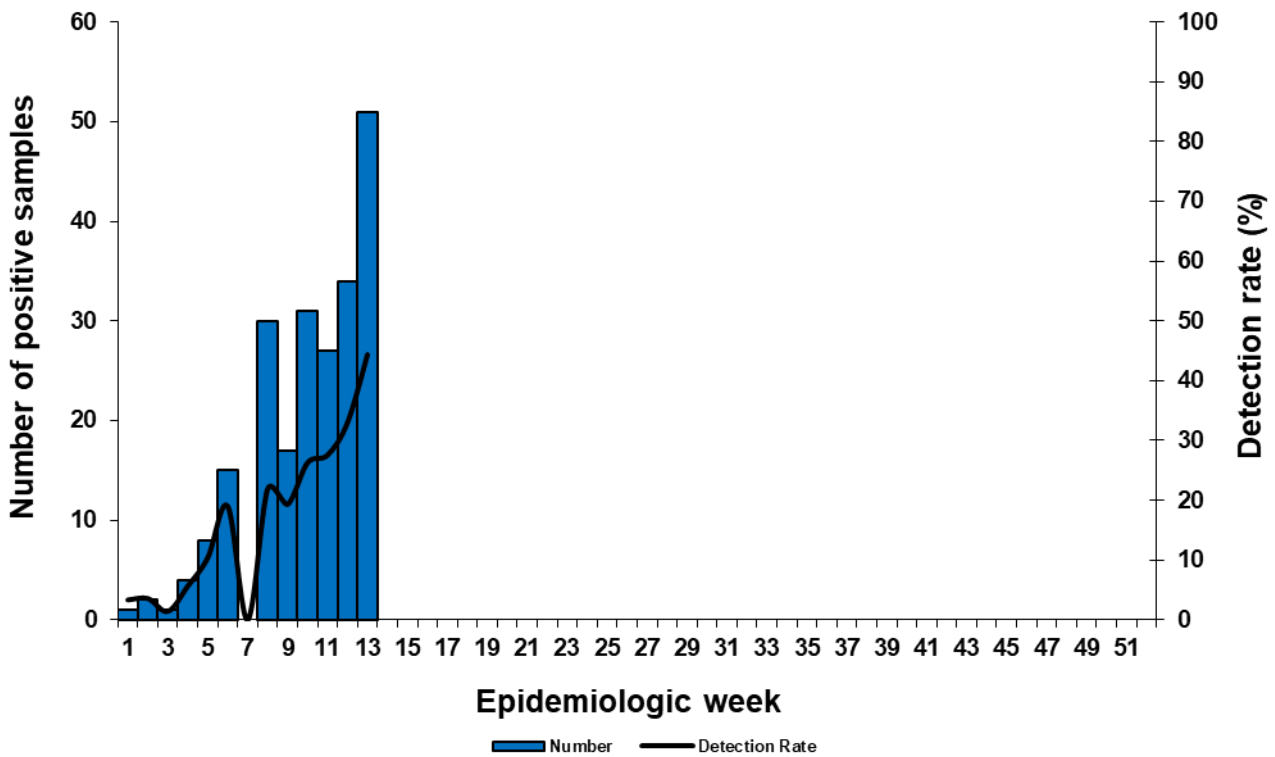
# Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 07/04/2019

Results until end of epidemiologic week 13 (2019)

## 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)	113	274
Helen Joseph-Rahima Moosa (GP)	45	255
Klerksdorp-Tshepong (NW)	5	126
Mapulaneng-Matikwana (MP)	11	113
Red Cross (WC)	35	215
Mitchell's Plain (WC)	12	70
<b>Total:</b>	<b>221</b>	<b>1053</b>

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

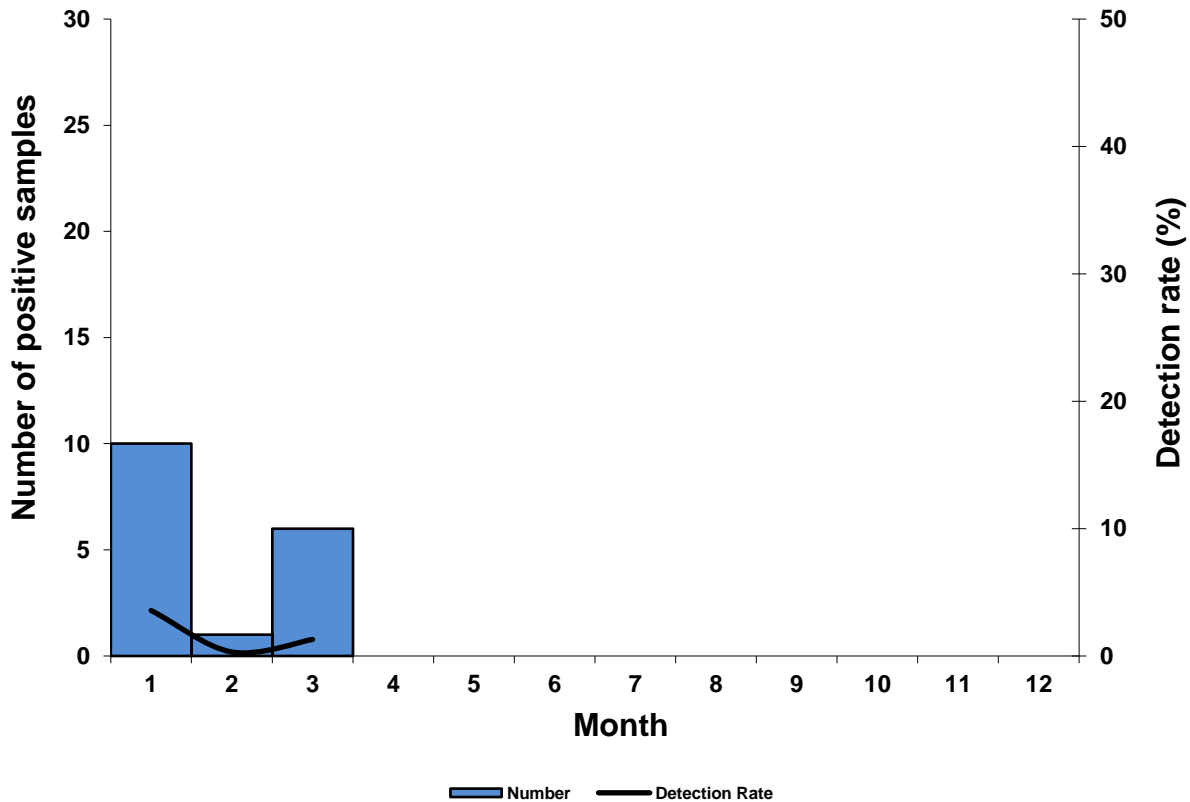
# Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 07/04/2019

Results until end of epidemiologic week 13 (2019)

## 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	273
Helen Joseph-Rahima Moosa (GP)	3	254
Klerksdorp-Tshepong (NW)	1	126
Mapulaneng-Matikwana (MP)	2	113
Red Cross (WC)	6	215
Mitchell's Plain (WC)	0	69
<b>Total:</b>	<b>17</b>	<b>1050</b>

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

\*\*All positive pertussis cases met the suspected pertussis case definition

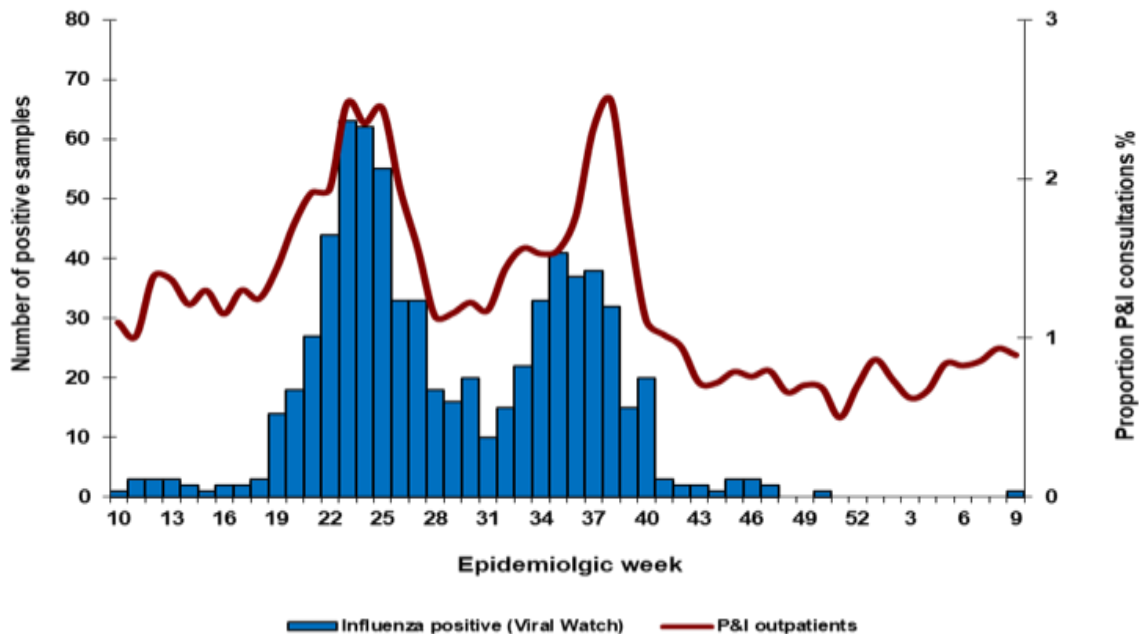
# Respiratory Pathogen Surveillance

Reporting period 05/03/2018 to 03/03/2019

Results until end of epidemiologic week 09 (2019)

## Private hospital consultations

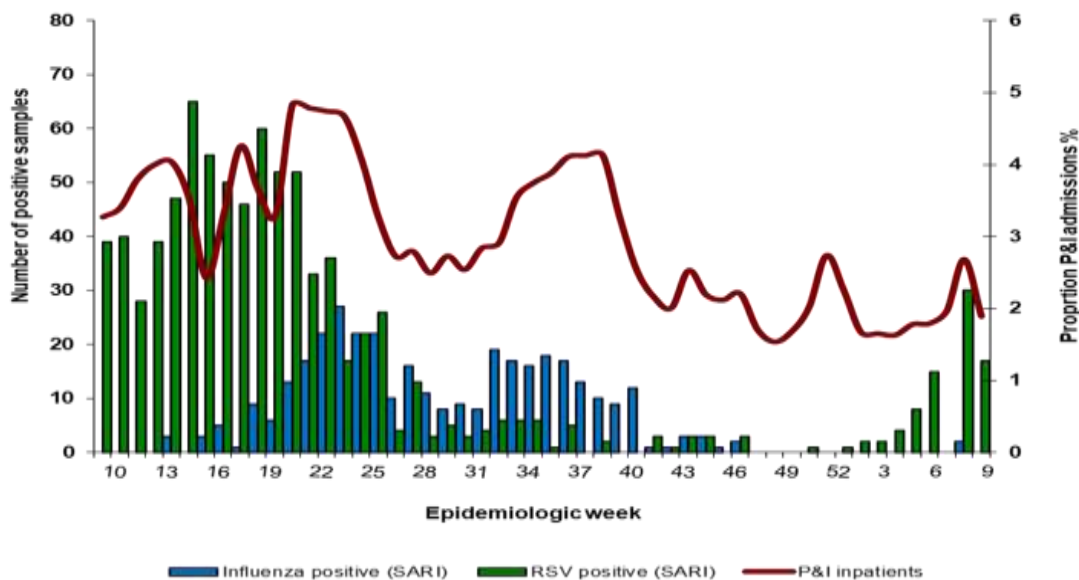
**Figure 11. Number of private hospital outpatient consultations\* with a diagnosis of pneumonia and influenza (P&I) and viral isolates\*\***



\* 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.