Respiratory Pathogens Surveillance Report **Week 9, 2019**

Programme Descriptions

Programme	ILI	Viral Watch	National syndromic surveillance for pneumonia	Private hospital consultations
Start year	2012	1984	2009	2002
Provinces*	KZ NW WC	EC FS KZ 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 (≥38°C) and cough, & onset ≤10 days	An acute respiratory illness with a temperature (≥38°C) and cough, & onset ≤10 days	Acute or chronic lower respiratory tract infection	ICD codes J10-J18
Specimens collected	≥5 years of age: oropharyngeal/nasopharyngeal swabs <5 years of age: nasopharyngeal aspirates	Throat and/or nasal swabs or Nasopharyngeal swabs	≥5 years of age: oropharyngeal/nasopharyngeal swabs <5 years of age: nasopharyngeal aspirates	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

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

Data are provisional as reported to date (Data for this report drawn on 20/03/2019). Number of consultations/specimens are reported/analysed by date of consultation/specimen collection.

Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 03/03/2019 *Results until end of epidemiologic week 09 (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 202 patients were received from 3 ILI sites. Influenza was detected in 2 specimens, both identified as influenza A(H1N1)pdm09.

Viral Watch programme: During the same period, specimens were received from 16 patients from Viral Watch sites. Influenza A(H1N1)pdm09 was detected in three, and A(H3N2) in two patients, four of who gave a history of travel to the Northern Hemisphere.

Pneumonia surveillance: In this time period, specimens from 606 patients with severe respiratory illness (SRI) were received from the 6 sentinel sites. Influenza A(H3N2) was detected in two 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 seven patients in the ILI programme, and 75 patients in the pneumonia surveillance programme.

Bordetella pertussis

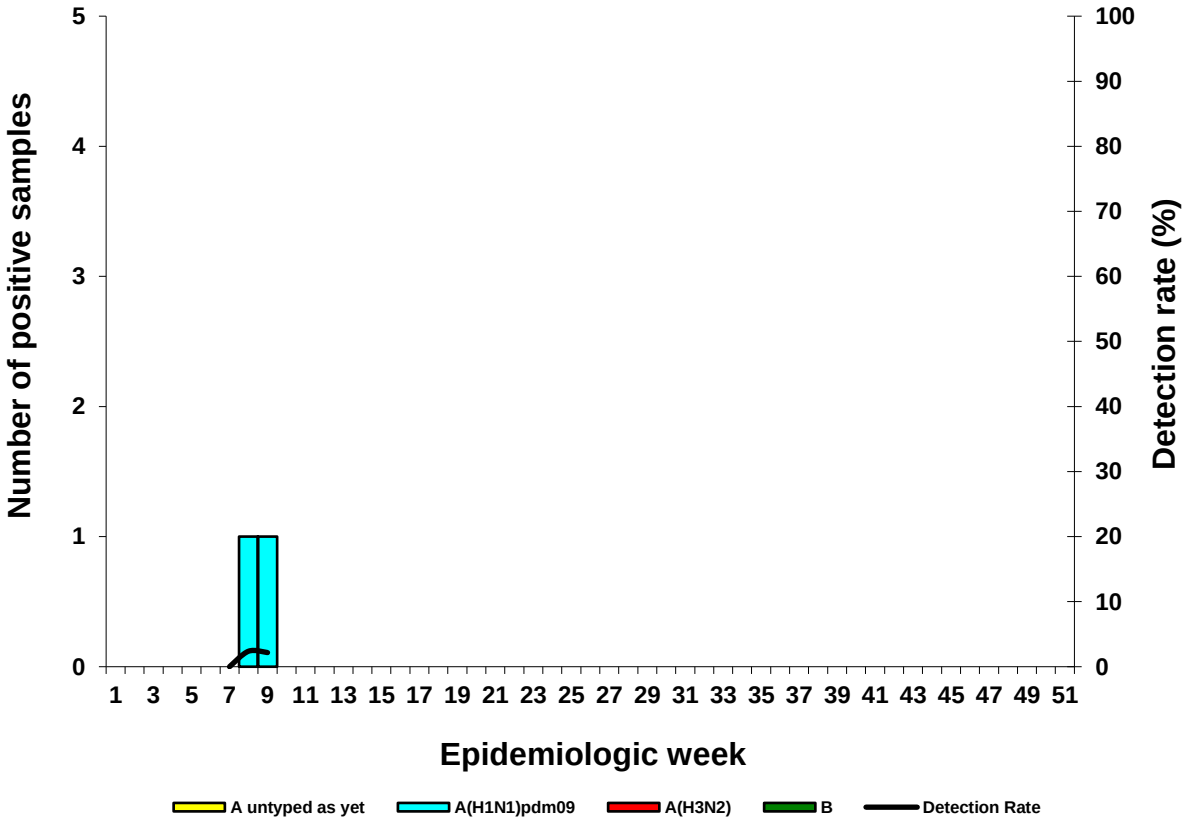
ILI programme: From 1st January 2019 to date, nasopharyngeal/oropharyngeal specimens were tested from 202 patients for *B. pertussis,* 3 (1.5%) tested positive.
Pneumonia surveillance: During the same period, nasopharyngeal specimens were tested from 606 patients for *B. pertussis* which was detected in 11 (1.8%) specimens.
In addition *B. pertussis* was detected in 1 of 23 (4.3%) specimens from patients who did not meet the pneumonia surveillance case definition, but who did meet the pertussis case definition.

Data are provisional as reported to date (Data for this report drawn on 20/03/2019). Number of consultations/specimens are reported/analysed by date of consultation/specimen collection.

Reporting period 01/01/2019 to 03/03/2019 *Results until end of epidemiologic week 09 (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 from week 1 – week 21 and from 2 sites in 2 provinces from week 22 (surveillance in Mpumalanga suspended since week 22).
**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)					13
Jouberton Clinic (NW)		1			67
Mitchell's Plain Clinic (WC)		1			122
Total:		2			202

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

Data are provisional as reported to date (Data for this report drawn on 20/03/2019). Number of consultations/specimens are reported/analysed by date of consultation/specimen collection.

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

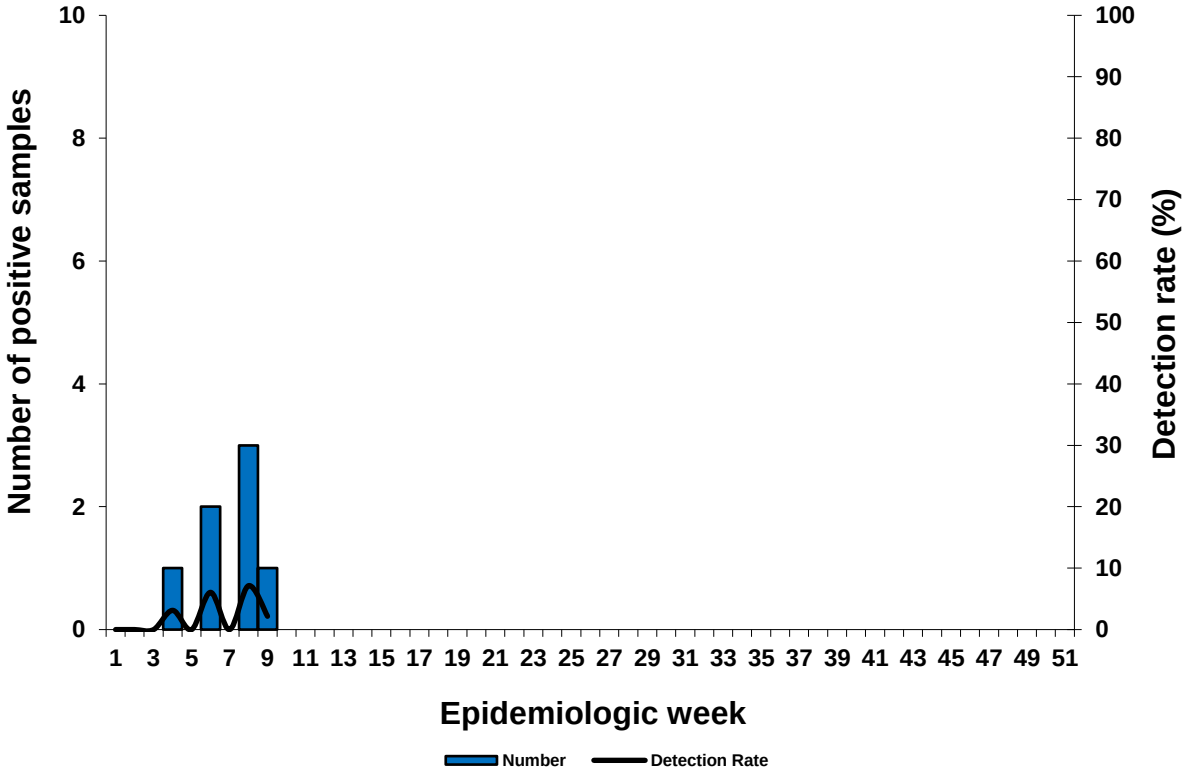


Table 2. Cumulative number of respiratory syncytial virus identified and total number of samples tested by clinic and province

Clinic (Province)	RSV Positive	Total samples
Edendale Gateway Clinic (KZ)	3	13
Jouberton Clinic (NW)		67
Mitchell's Plain Clinic (WC)	4	122
Total	7	202

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

Data are provisional as reported to date (Data for this report drawn on 20/03/2019). Number of consultations/specimens are reported/analysed by date of consultation/specimen collection.

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

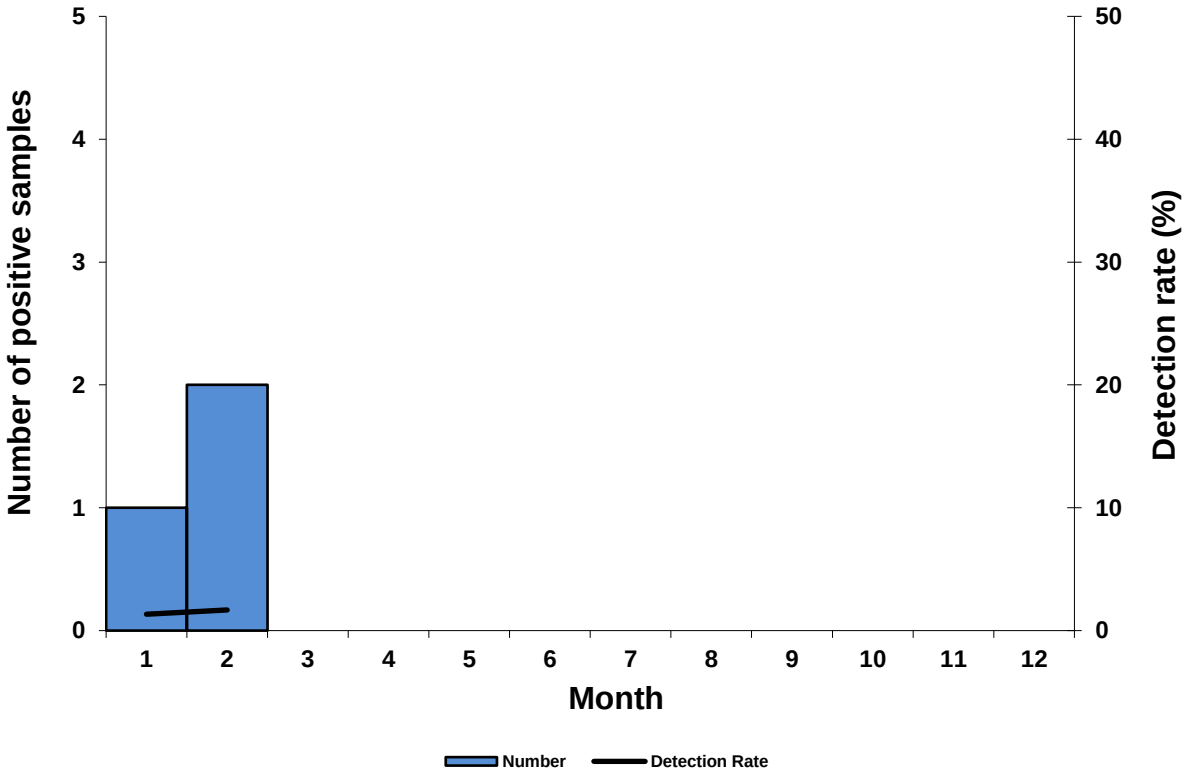


Table 3 Cumulative number of *B. pertussis* identified and total number of samples tested by province**

Clinic (Province)	*B. pertussis* Positive**	Total samples
Edendale Gateway Clinic (KZ)		13
Jouberton Clinic (NW)	2	67
Mitchell's Plain Clinic (WC)	1	122
Total:	3	202

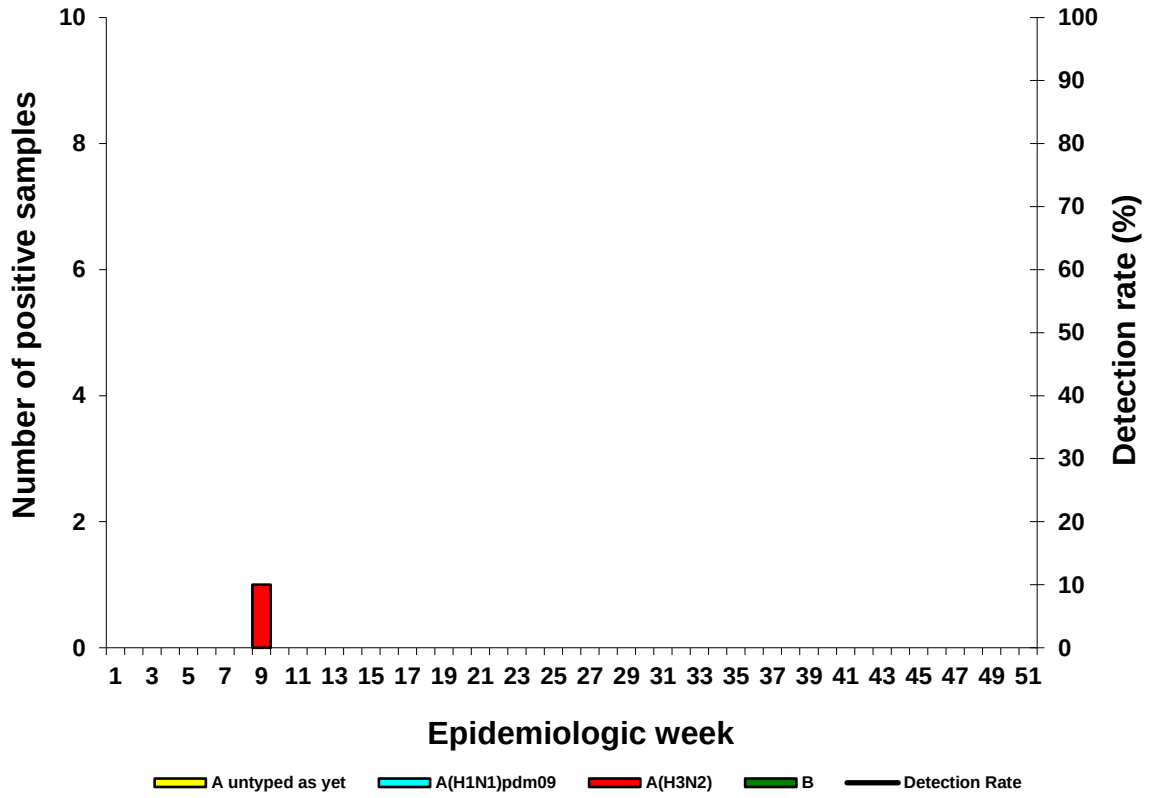
KZ: KwaZulu-Natal; NW: North West; WC: Western Cape

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

Reporting period 01/01/2019 to 03/03/2019 *Results until end of epidemiologic week 09 (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

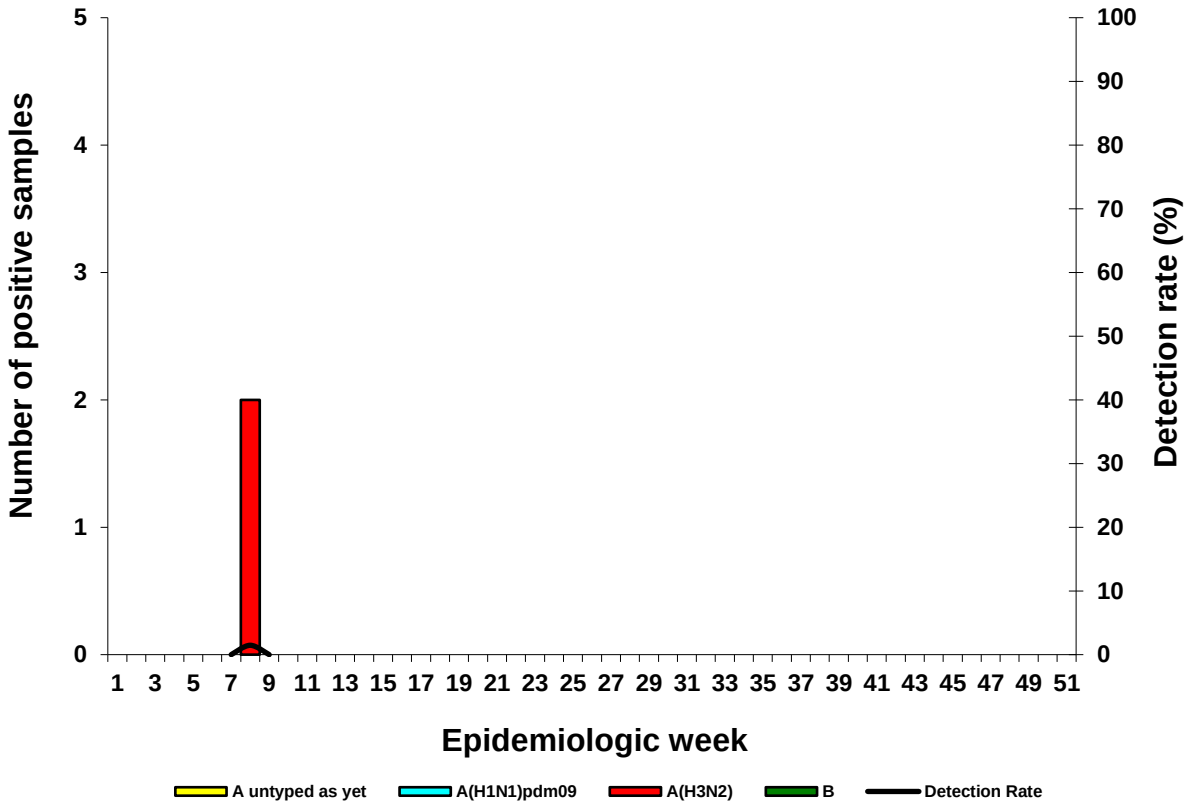
Province	A not subtyped	A(H1N1)pdm09	A(H3N2)	B	Total samples
Eastern Cape					
Free State					
Gauteng			1		10
Limpopo					
Mpumalanga					1
North West					
Northern Cape					
Western Cape					5
Total:			1		16

From 01 January 2019 to date, 11 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.

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)					173
Helen Joseph-Rahima Moosa (GP)					145
Klerksdorp-Tshepong (NW)					63
Mapulaneng-Matikwana (MP)			1		66
Red Cross (WC)			1		36
Mitchell's Plain (WC)					123
Total:			2		606

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

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

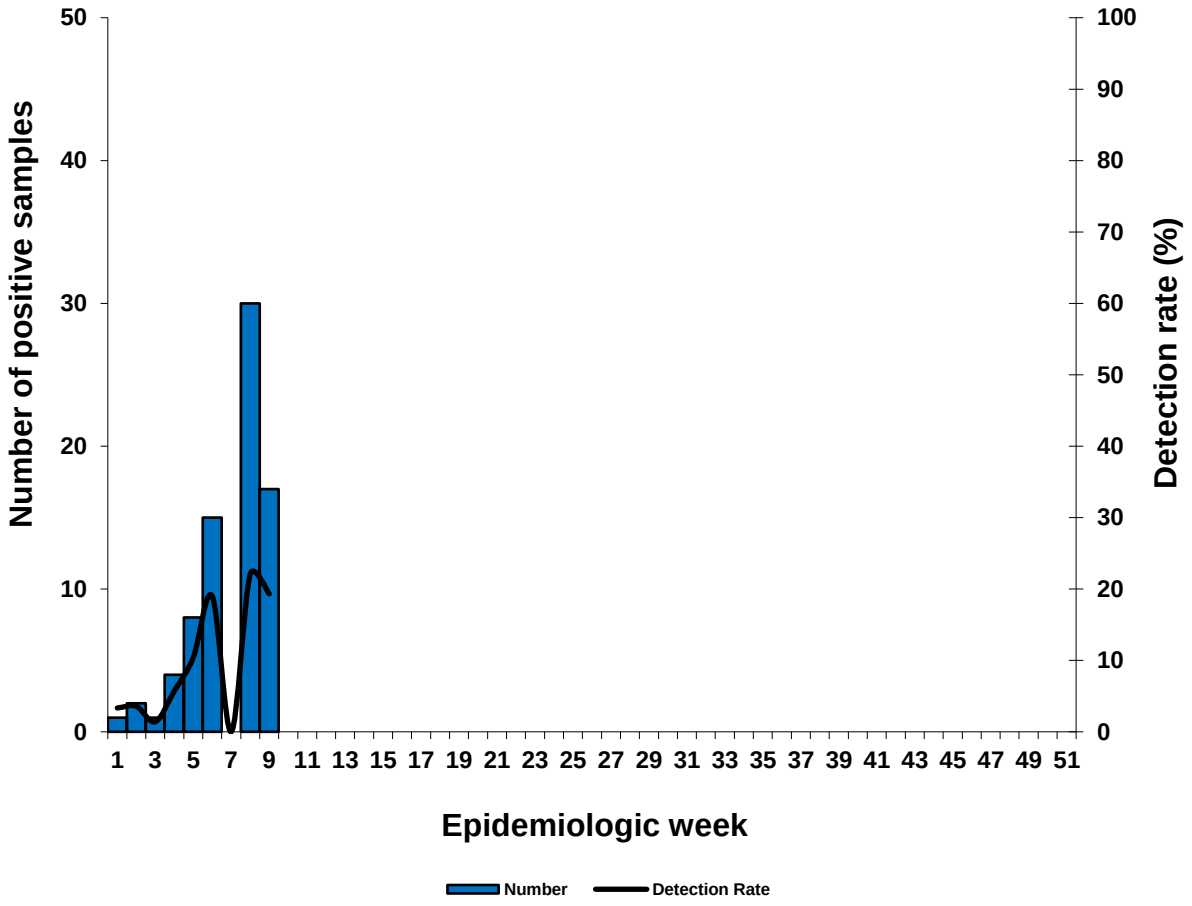


Table 6: Cumulative number of respiratory syncytial virus identified and total number of samples tested by hospital

Hospital (Province)	RSV Positive	Total samples
Edendale (KZ)	63	173
Helen Joseph-Rahima Moosa (GP)	9	145
Klerksdorp-Tshepong (NW)	0	63
Mapulaneng-Matikwana (MP)	1	66
Red Cross (WC)	0	36
Mitchell's Plain (WC)	2	123
Total:	75	606

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

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

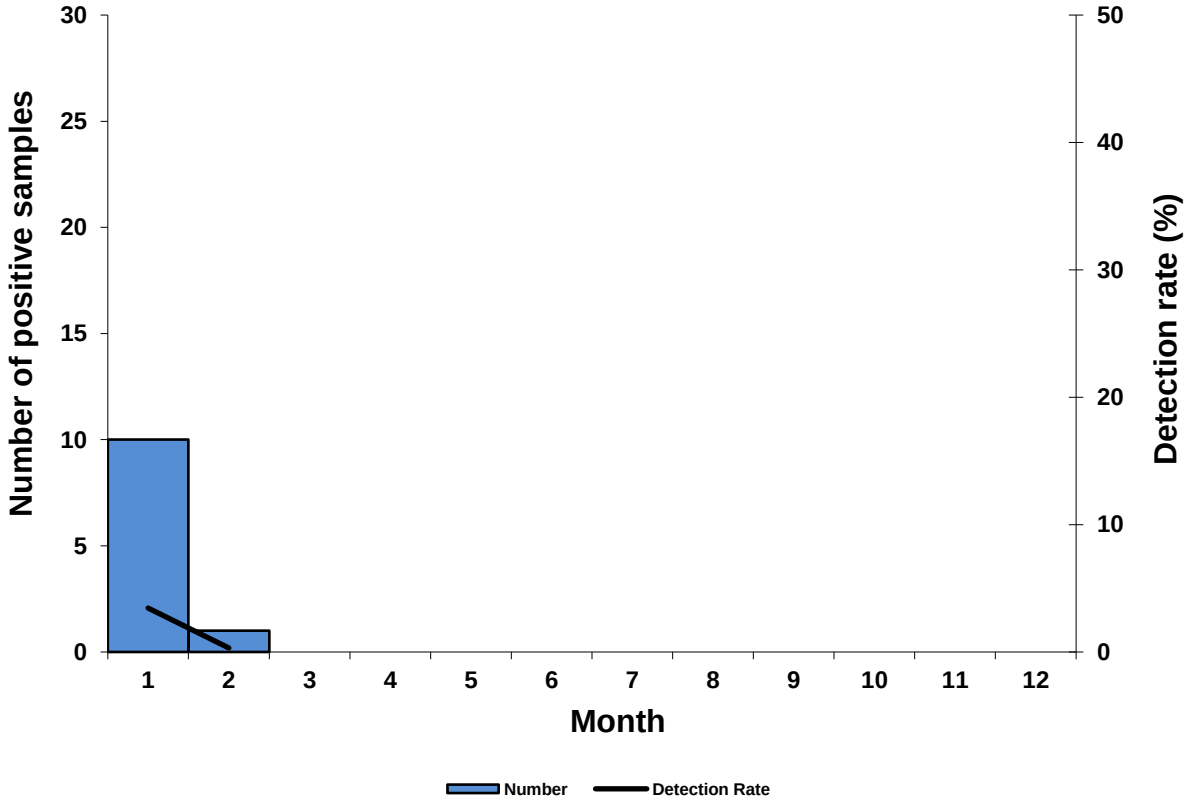


Table 9. Cumulative number of *B. pertussis* identified and total number of samples tested by hospital and province

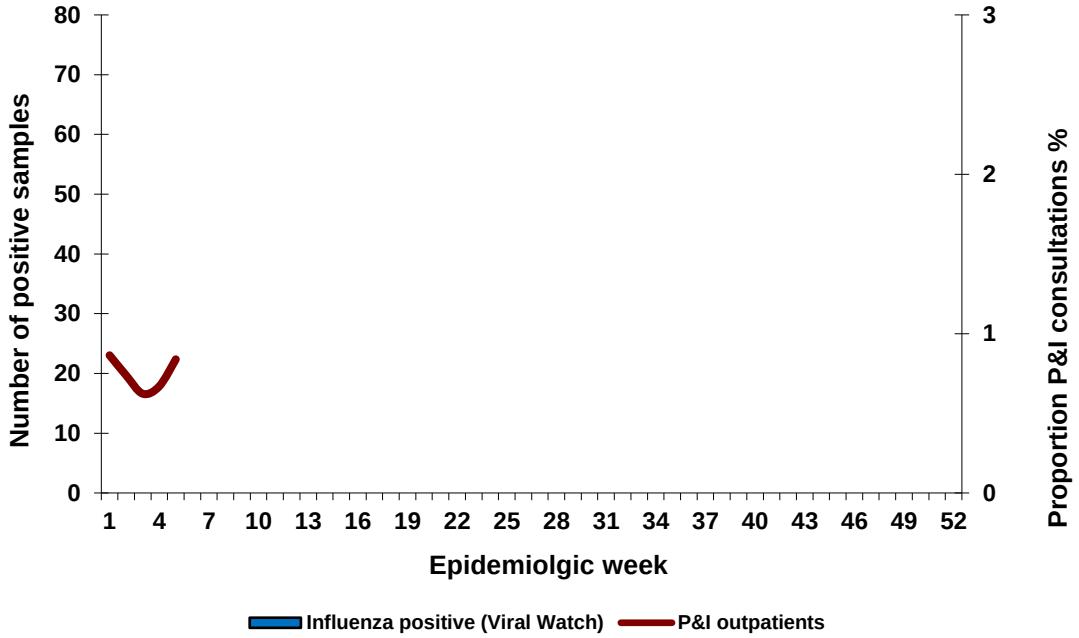
Hospital (Province)	*B. pertussis* Positive**	Total samples
Edendale (KZ)	4	173
Helen Joseph-Rahima Moosa (GP)	1	145
Klerksdorp-Tshepong (NW)	1	63
Mapulaneng-Matikwana (MP)	0	66
Red Cross (WC)	0	36
Mitchell's Plain (WC)	5	123
Total:	11	606

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

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

Private hospital consultations

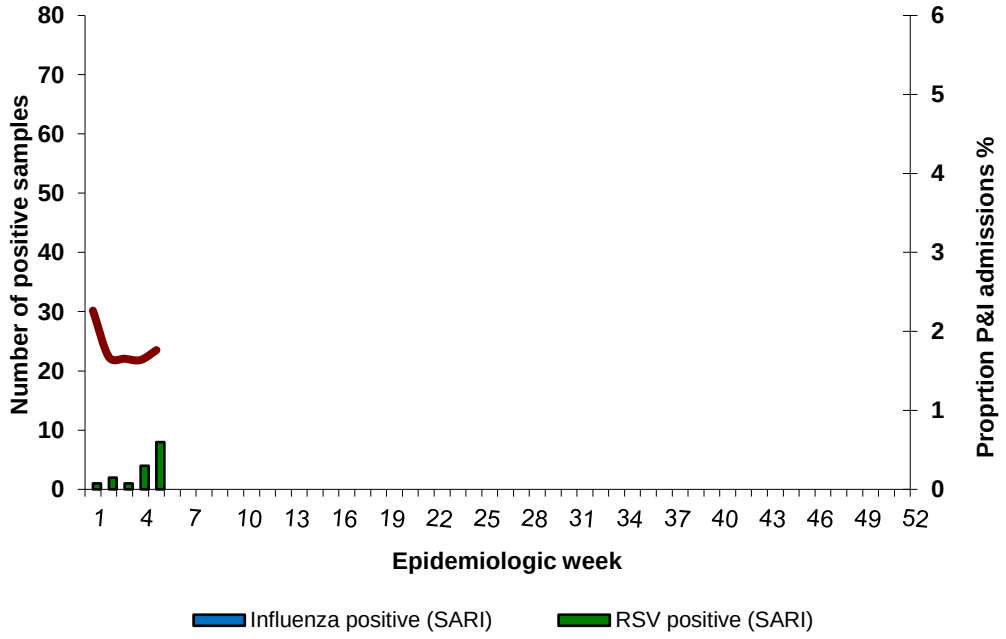
Figure 11. Number of private hospital outpatient consultations* with a diagnosis of pneumonia and influenza (P&I) and viral isolates**



* 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.

Data are provisional as reported to date (Data for this report drawn on 20/03/2019). Number of consultations/specimens are reported/analysed by date of consultation/specimen collection.