Respiratory Pathogens Surveillance Report **Week 17, 2019**

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 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	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*;

Data are provisional as reported to date (Data for this report drawn on 08/05/2019). Number of consultations/specimens are reported/analysed by date of consultation/specimen collection.

Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 05/05/2019 *Results until end of epidemiologic week 17 (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 555 patients were received from 3 ILI sites. Influenza was detected in 14 specimens, eight were identified as influenza A(H1N1)pdm09 and six as influenza A(H3N2).
Viral Watch programme: During the same period, specimens were received from 131 patients from Viral Watch sites.
Influenza was detected in 32 patients, nine were influenza A(H1N1)pdm09 and 23 influenza A(H3N2). Of these, four gave a history of travel to the Northern Hemisphere.

Pneumonia surveillance: In this time period, specimens from 1464 patients with severe respiratory illness (SRI) were received from the 6 sentinel sites. Influenza A(H3N2) was detected in six specimens, A(H1N1)pdm09 in two and influenza B(Yamagata) in one.

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 54 patients in the ILI programme, 419 patients in the pneumonia surveillance programme and in five patients in the Viral Watch programme.

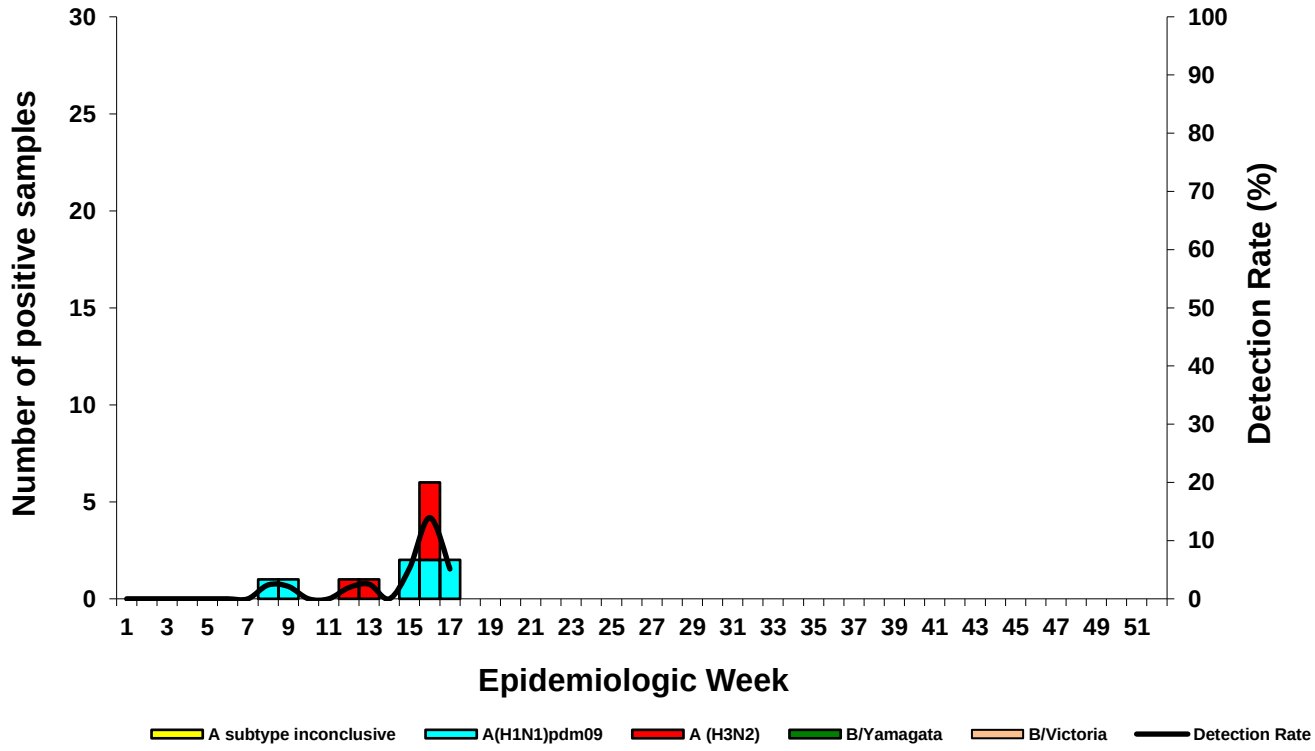
Bordetella pertussis

ILI programme: From 1 January 2019 to date, nasopharyngeal/oropharyngeal specimens were tested from 553 patients for *B. pertussis*, 4 (0.7%) tested positive.
Pneumonia surveillance: During the same period, nasopharyngeal specimens were tested from 1458 patients for *B. pertussis* which was detected in 19 (1.3%) specimens.
In addition *B. pertussis* was detected in 1 of 62 (1.6 %) specimens from patients who did not meet the pneumonia/ILI surveillance case definition, but who did meet the suspected pertussis case definition.

Reporting period 01/01/2019 to 05/05/2019 *Results until end of epidemiologic week 17 (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 subtype inconclusive	A(H1N1)pdm09	A(H3N2)	B/Yamagata	B/Victoria	Total samples
Edendale Gateway Clinic (KZ)						27
Jouberton Clinic (NW)		1				161
Mitchell's Plain Clinic (WC)		7	6			367
Total:		8	6			555

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

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Reporting period 01/01/2019 to 05/05/2019 *Results until end of epidemiologic week 17 (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

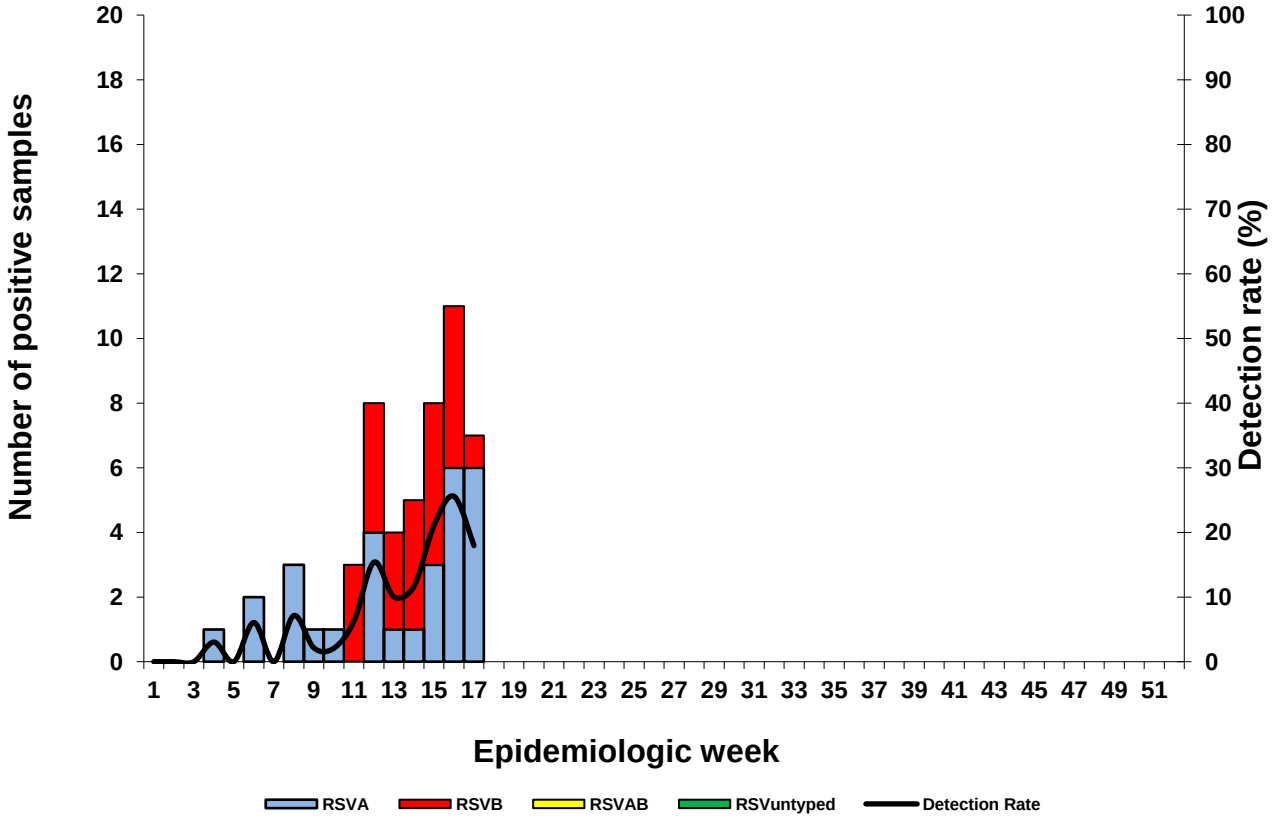


Table 2. Cumulative number of respiratory syncytial virus identified and total number of samples tested by clinic and province

Clinic (Province)	RSVA	RSVB	RSVAB	RSV untyped	Total samples
Edendale Gateway Clinic (KZ)	5				27
Jouberton Clinic (NW)	11				161
Mitchell's Plain Clinic (WC)	13	25			367
Total	29	25			555

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

Data are provisional as reported to date (Data for this report drawn on 08/05/2019). 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

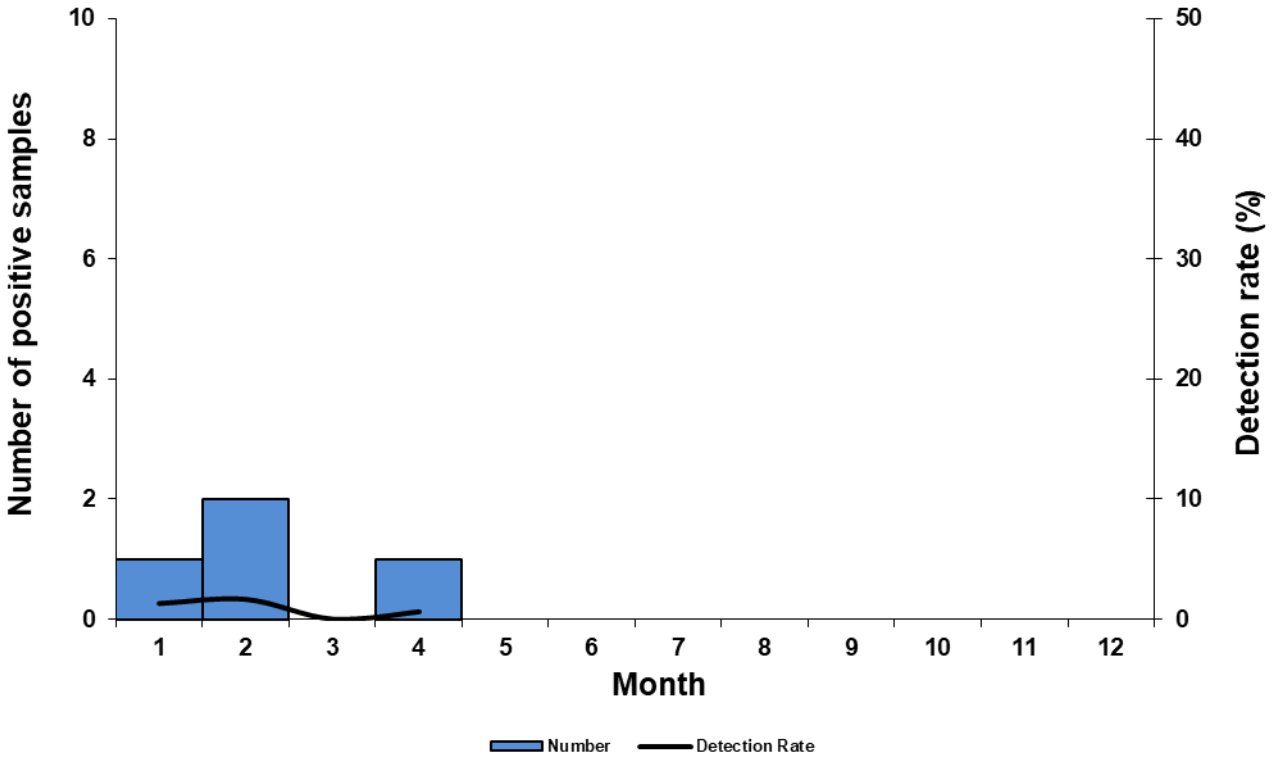


Table 3 Cumulative number of *B. pertussis* identified and total number of samples tested by province**

Clinic (Province)	*B. pertussis* Positive**	Total samples
Edendale Gateway Clinic (KZ)		27
Jouberton Clinic (NW)	2	160
Mitchell's Plain Clinic (WC)	2	366
Total:	4	553

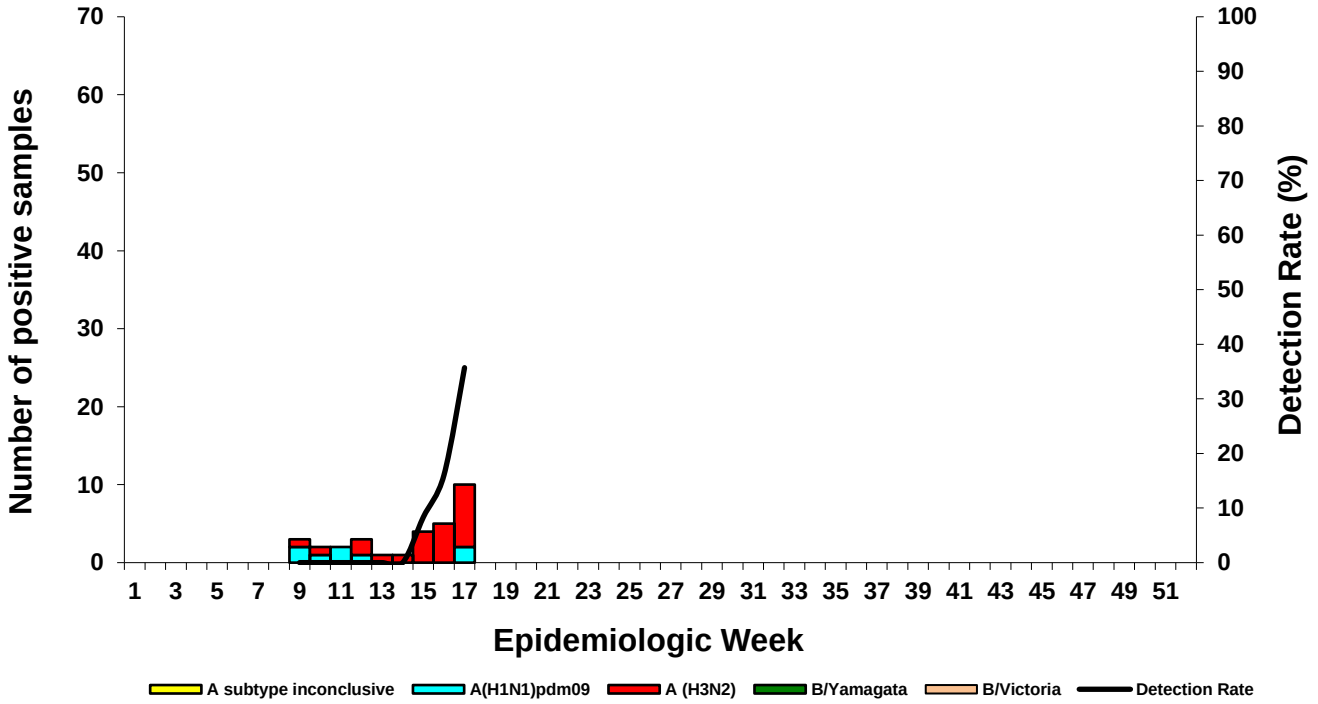
KZ: KwaZulu-Natal; NW: North West; WC: Western Cape

**9 cases met the suspected pertussis case definition but did not meet Influenza-like illness (ILI) case definition. These are not included in the table or the epidemiological curve

Reporting period 01/01/2019 to 05/05/2019 *Results until end of epidemiologic week 17 (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 subtype inconclusive	A(H1N1)pdm09	A(H3N2)	B/Yamagata	B/Victoria	Total samples
Eastern Cape						4
Free State						1
Gauteng		2	5			60
Limpopo						2
Mpumalanga		1				7
North West						0
Northern Cape						0
Western Cape		6	18			57
Total:		9	23			131

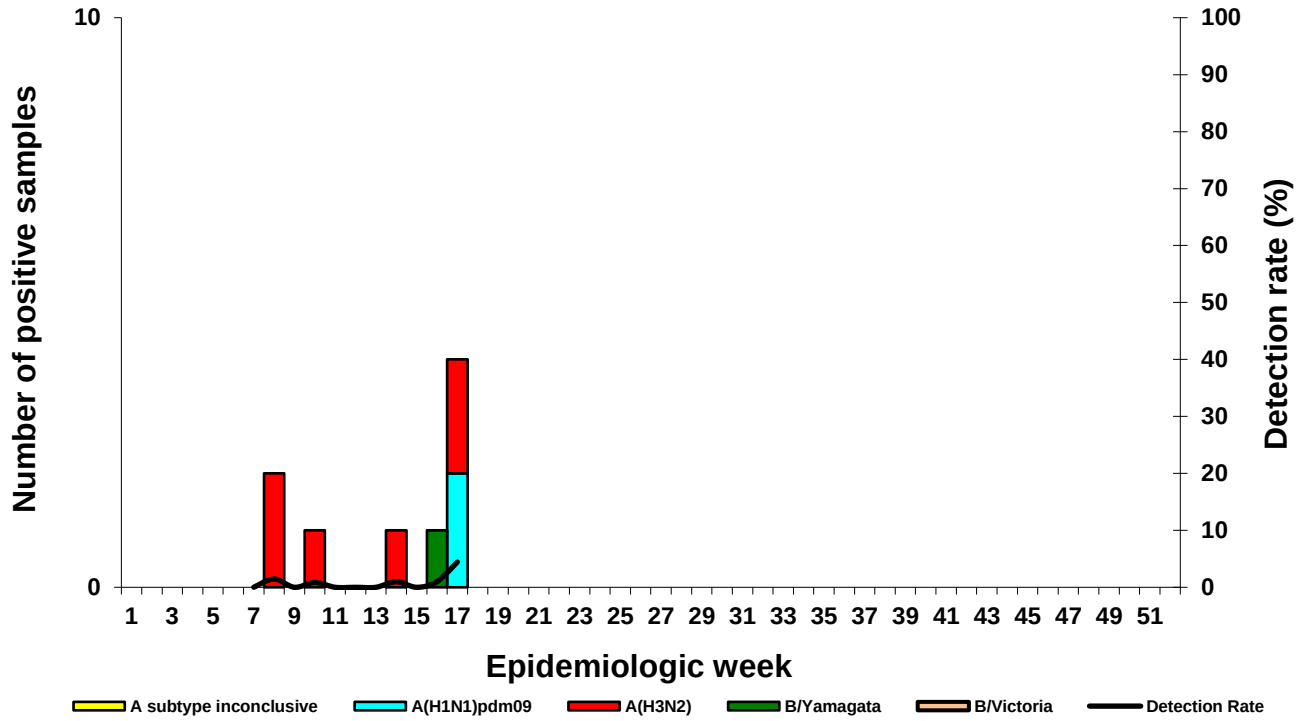
From 01 January 2019 to date, 15 patients were tested for influenza at the time of entry into South Africa following travel abroad and 1 tested influenza A(H1N1)pdm09 positive.

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

Reporting period 01/01/2019 to 05/05/2019 *Results until end of epidemiologic week 17 (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 subtype inconclusive	A(H1N1)pdm09	A(H3N2)	B/Yamagata	B/Victoria	Total samples
Edendale (KZ)						317
Helen Joseph-Rahima Moosa (GP)						385
Klerksdorp-Tshepong (NW)						175
Mapulaneng-Matikwana (MP)			1	1		152
Red Cross (WC)			4			315
Mitchell's Plain (WC)		2	1			120
Total:		2	6	1		1464

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

Reporting period 01/01/2019 to 05/05/2019 *Results until end of epidemiologic week 17 (2019)*

National syndromic surveillance for pneumonia

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

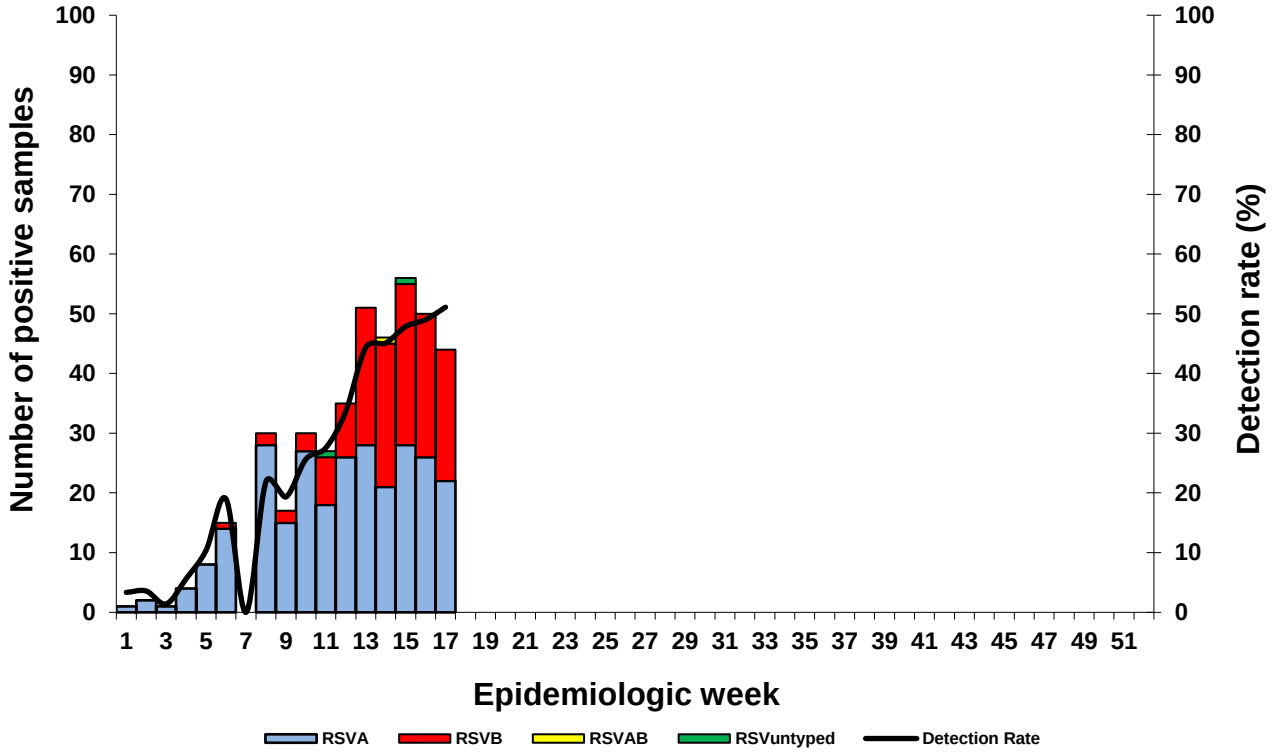


Table 6: Cumulative number of respiratory syncytial virus identified and total number of samples tested by hospital

Hospital (Province)	RSVA	RSVB	RSVAB	RSV untyped	Total samples
Edendale (KZ)	119	5			317
Helen Joseph-Rahima Moosa (GP)	74	34	1		385
Klerksdorp-Tshepong (NW)	12	2			175
Mapulaneng-Matikwana (MP)	22	2			152
Red Cross (WC)	29	74		2	315
Mitchell's Plain (WC)	13	30			120
Total:	269	149	1	2	1464

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

Data are provisional as reported to date (Data for this report drawn on 08/05/2019). Number of consultations/specimens are reported/analysed by date of consultation/specimen collection.

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

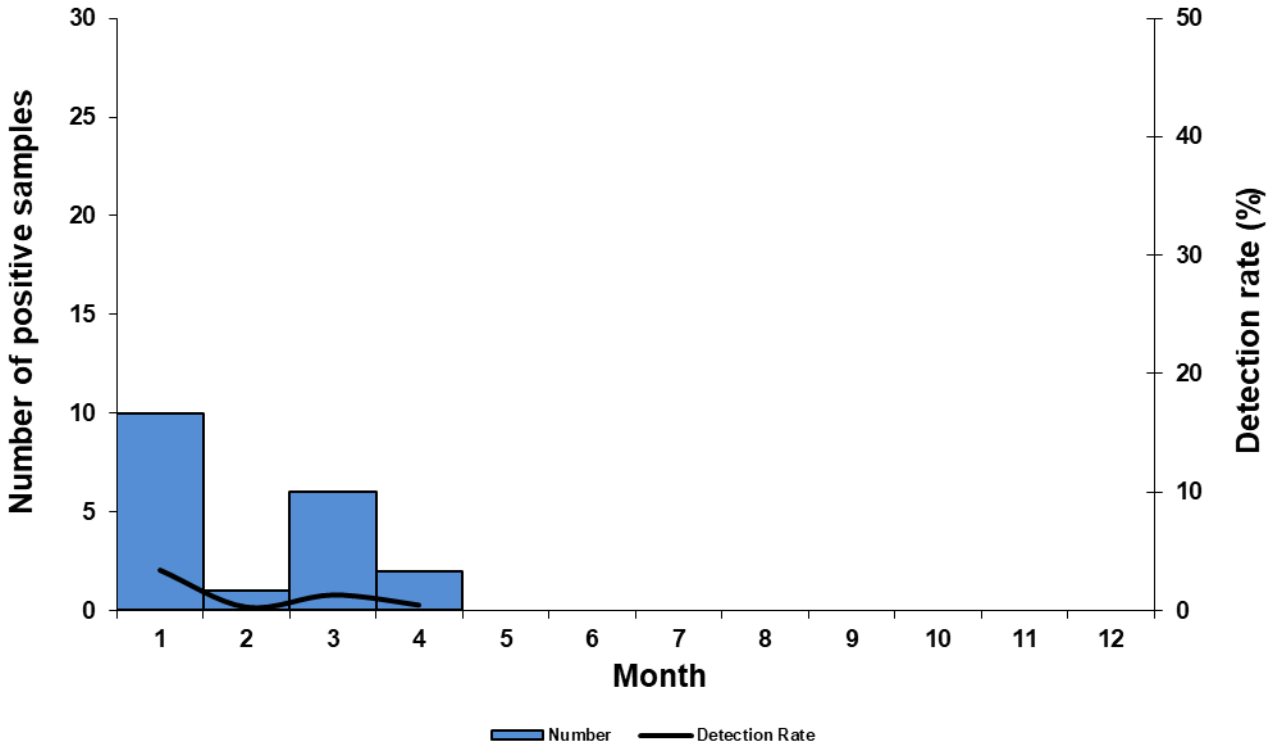


Table 9. Cumulative number of *B. pertussis* identified and total number of samples tested by hospital and province

Hospital (Province)	*B. pertussis* Positive**	Total samples
Edendale (KZ)	5	317
Helen Joseph-Rahima Moosa (GP)	4	384
Klerksdorp-Tshepong (NW)	1	175
Mapulaneng-Matikwana (MP)	2	150
Red Cross (WC)	7	313
Mitchell's Plain (WC)	0	119
Total:	19	1458

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

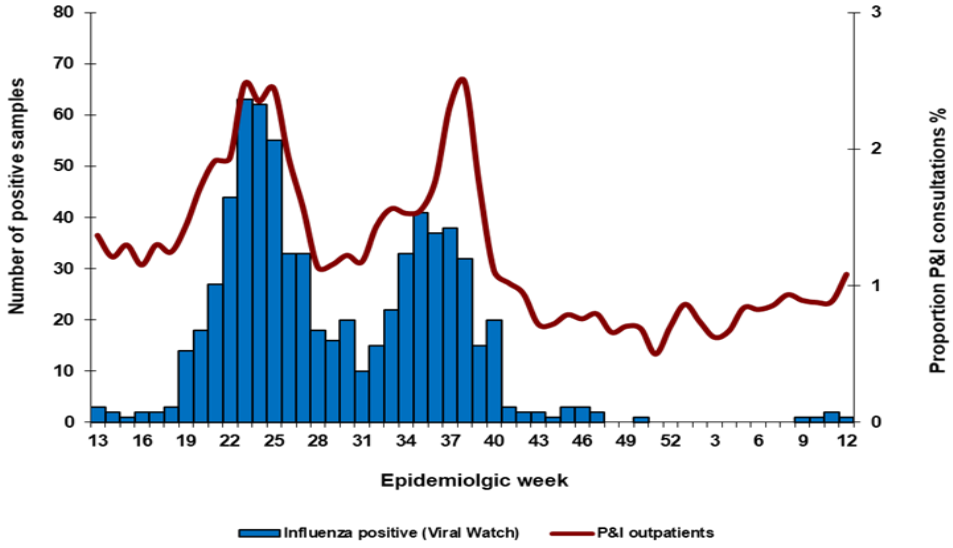
**53 cases met the suspected pertussis case definition but did not meet Pneumonia Surveillance case definition. These are not included in the table and epidemiologic curve

Data are provisional as reported to date (Data for this report drawn on 08/05/2019). Number of consultations/specimens are reported/analysed by date of consultation/specimen collection.

Reporting period 26/03/2018 to 24/03/2019 *Results until end of epidemiologic week 12 (2019)*

Private hospital consultations

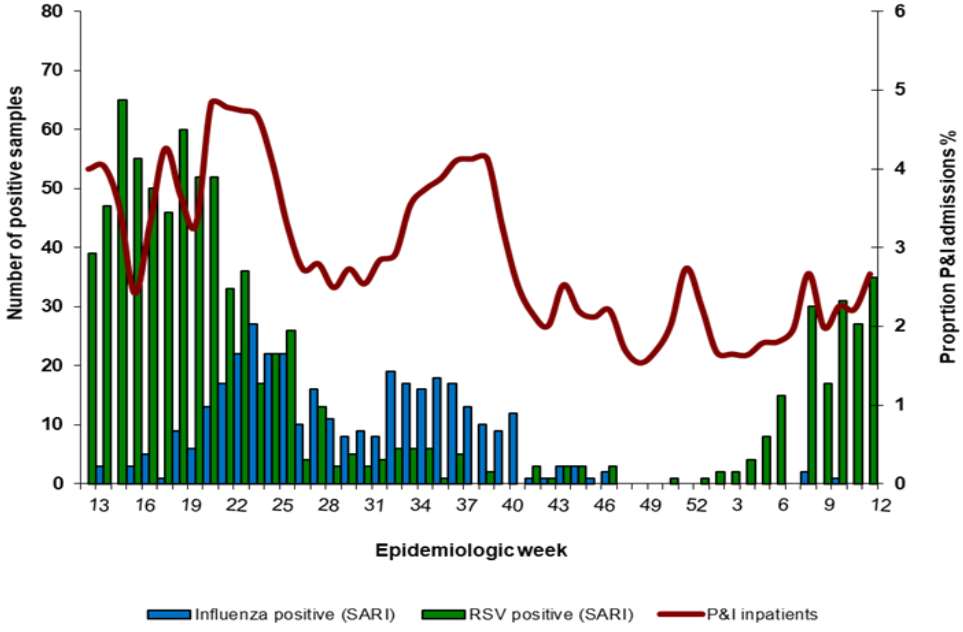
Figure 11. Number of private hospital outpatient consultations* with a diagnosis of pneumonia and influenza (P&I) and viral isolates**



* 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.

Data are provisional as reported to date (Data for this report drawn on 08/05/2019). Number of consultations/specimens are reported/analysed by date of consultation/specimen collection.