



Page	Content
2	Surveillance programme description
3	Comments
4-6	Systematic Influenza-like illness (ILI) surveillance Influenza Respiratory syncytial virus <i>Bordetella pertussis</i>
7	Influenza-like illness (ILI) Viral Watch Influenza
8-10	National syndromic surveillance for pneumonia Influenza Respiratory syncytial virus <i>Bordetella pertussis</i>
11	Private Hospital Consultation Outpatient consultations In patient consultations

Respiratory Pathogen Surveillance

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 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 ($\geq 38^{\circ}\text{C}$) and cough, & onset ≤ 10 days	An acute respiratory illness with a temperature ($\geq 38^{\circ}\text{C}$) 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*

Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 29/06/2019

Results until end of epidemiologic week 26(2019)

Comments:

Influenza

The 2019 season 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. Influenza transmission and impact are both currently moderate.

ILI programme: In 2019 to date, specimens from 962 patients were received from 3 ILI sites. Influenza was detected in 121 specimens, 17 were identified as influenza A(H1N1)pdm09 and 104 as influenza A(H3N2).

Viral Watch programme: During the same period, specimens were received from 1015 patients from Viral Watch sites in 6 provinces. Influenza was detected in 684 patients, of which 33 were influenza A(H1N1)pdm09, 635 influenza A(H3N2), 14 A subtype inconclusive and two dual positive for influenza A(H1N1)pdm09 and A(H3N2). Of these, eight gave a history of travel to the Northern Hemisphere.

Pneumonia surveillance: In this time period, specimens from 2375 patients with severe respiratory illness (SRI) were received from the 6 sentinel sites. Influenza was detected in 153 patients, influenza A(H1N1)pdm09 in eight, influenza A(H3N2) in 138, A subtype inconclusive in five and influenza B(Yamagata) in one. In addition, there was one dual positive for influenza A(H1N1)pdm09 and A(H3N2).

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 123 patients in the ILI programme, 709 patients in the pneumonia surveillance programme and in 24 patients in the Viral Watch programme.

Bordetella pertussis

ILI programme: From 1 January 2019 to date, combined nasopharyngeal and oropharyngeal specimens were tested from 749 patients for *B. pertussis*, 8 (1.1%) tested positive.

Pneumonia surveillance: During the same period, combined nasopharyngeal and oropharyngeal specimens were tested from 2370 patients for *B. pertussis*, which was detected in 26 (1.1%) specimens.

In addition, *B. pertussis* was detected in 1 of 86 (1.2 %) specimens from patients who did not meet the pneumonia/ILI surveillance case definition, but who did meet the suspected pertussis case definition.

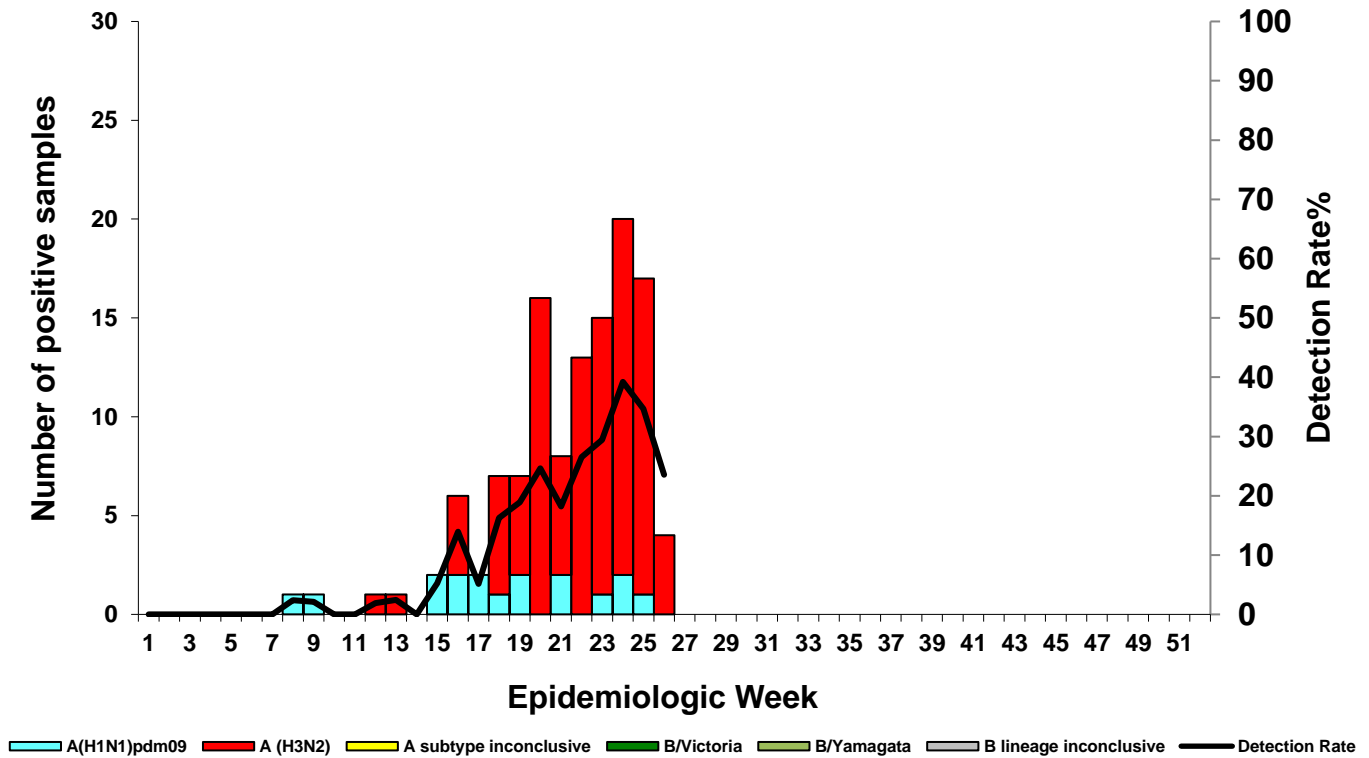
Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 29/06/2019

Results until end of epidemiologic week 26(2019)

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 3 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

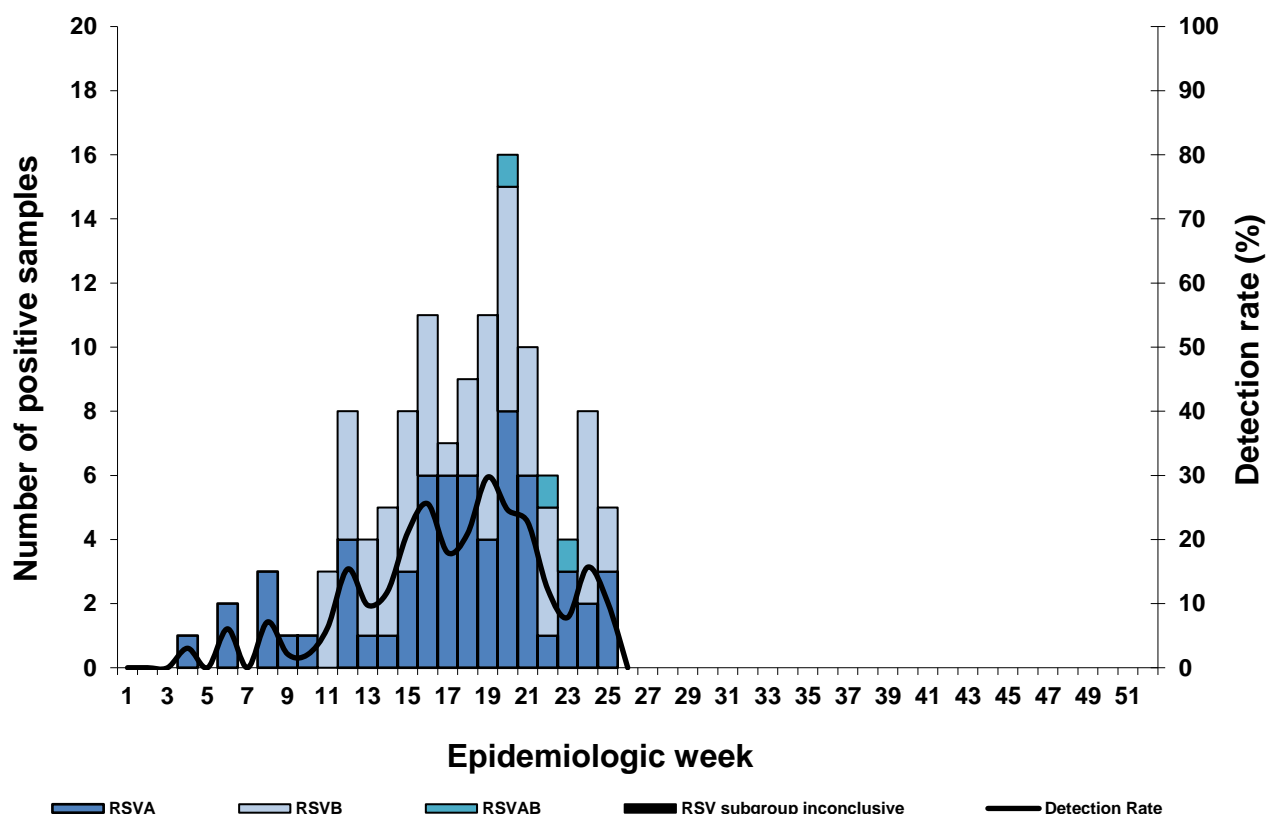
Clinic (Province)	A(H1N1)pdm09	A(H3N2)	A subtype inconclusive	B/Victoria	B/Yamagata	B lineage inconclusive	Total samples
Eastridge (WC)	13	53	0	0	0	0	521
Edendale Gateway (KZ)	1	4	0	0	0	0	53
Jouberton (NW)	1	42	0	0	0	0	329
Mitchell's Plain (WC)	2	5	0	0	0	0	59
Total:	17	104	0	0	0	0	962

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

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

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)	RSVA	RSVB	RSVAB	RSV subgroup inconclusive	Total samples
Eastridge (WC)	25	54	2	0	521
Edendale Gateway (KZ)	5	0	0	0	53
Jouberton (NW)	32	0	1	0	329
Mitchell's Plain (WC)		4	0	0	59
Total	62	58	3	0	962

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

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

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

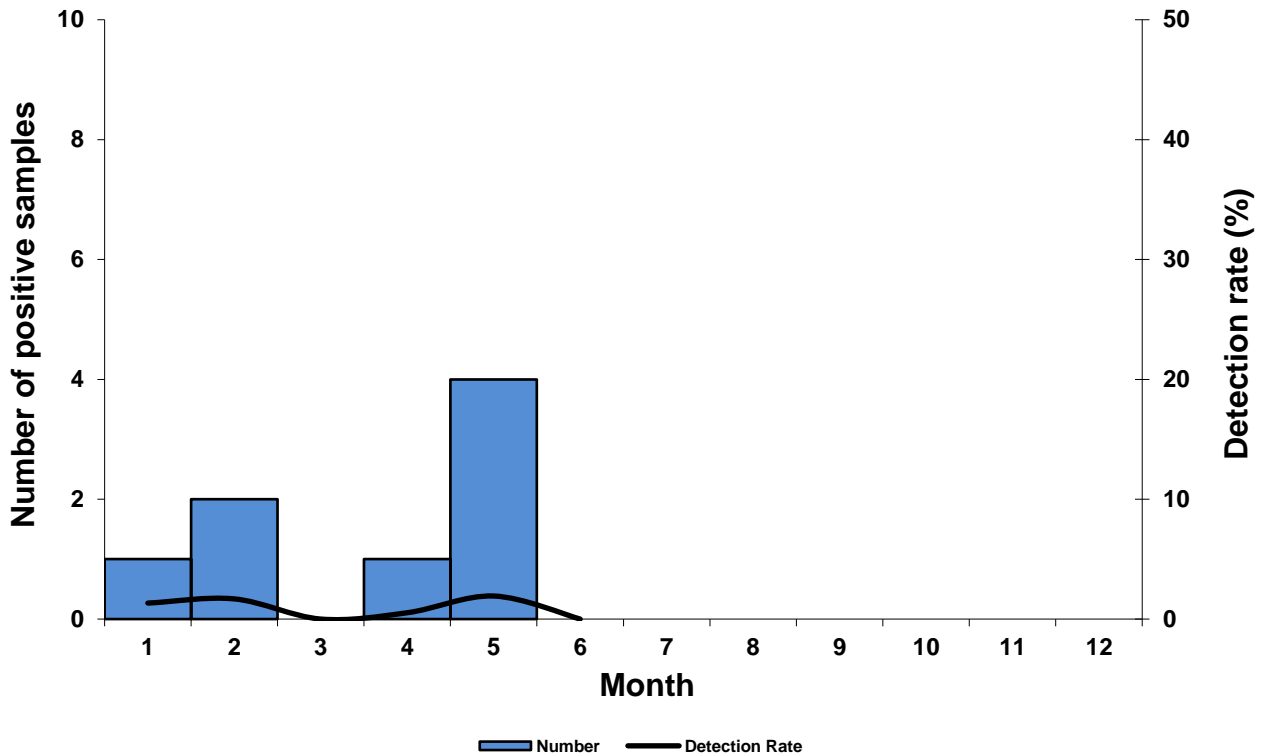


Table 3. Cumulative number of *B. pertussis* identified and total number of samples tested by province**

Clinic (Province)	<i>B. pertussis</i> Positive**	Total samples
Eastridge (WC)	3	520
Edendale Gateway (KZ)	2	53
Jouberton (NW)	3	328
Mitchell's Plain (WC)		57
Total:	8	958

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

**20 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

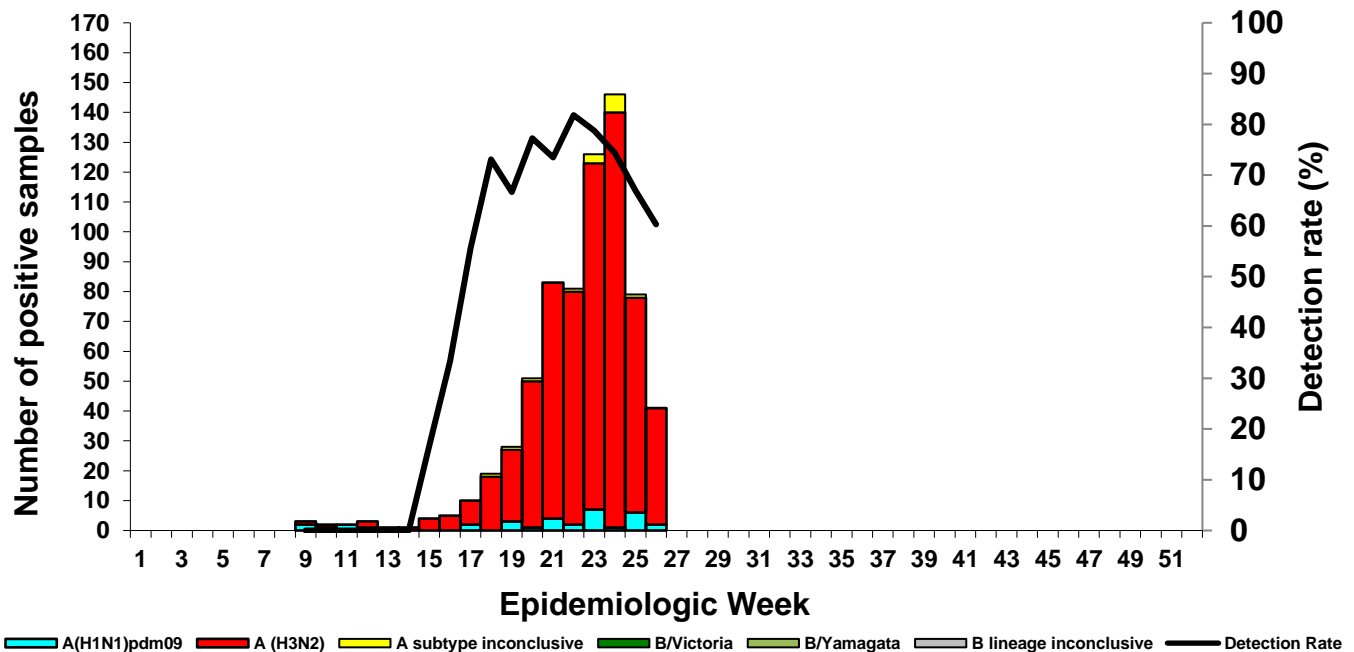
Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 29/06/2019

Results until end of epidemiologic week 26(2019)

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 90 sentinel sites in 6 provinces

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

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

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	1	45	3	0	0	0	60
Free State	0	51	0	0	0	0	64
Gauteng	7	326	8	0	0	0	518
Limpopo	1	22	0	0	0	0	26
Mpumalanga	4	21	0	0	0	0	50
North West	0	4	0	0	0	0	4
Northern Cape	0	0	0	0	0	0	0
Western Cape	22	168	3	0	0	0	293
Total:	35	637	14	0	0	0	1015

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

From 01 January 2019 to date, 26 patients were tested for influenza at the time of entry into South Africa following travel abroad and influenza was detected in 3 patients, of which one were influenza A(H1N1)pdm09 and 2 influenza A(H3N2).

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

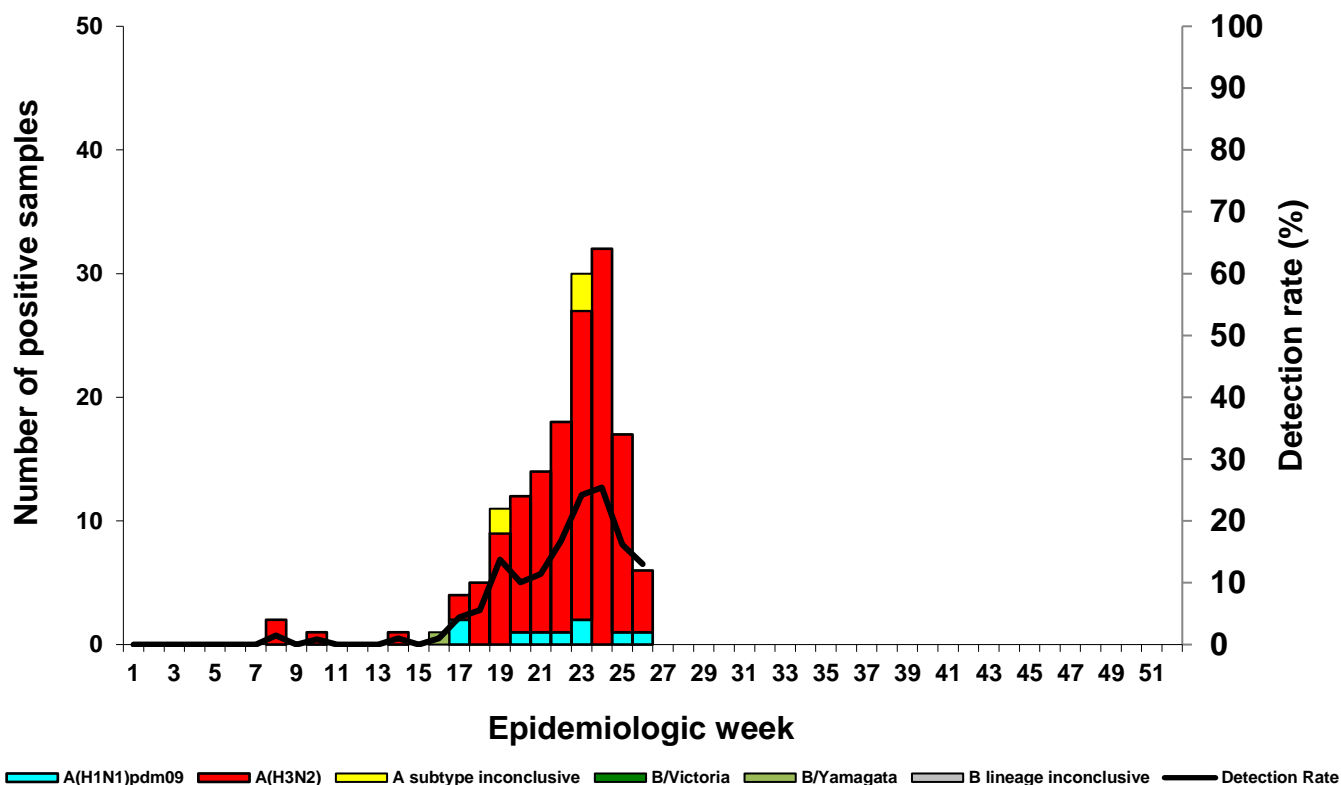
Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 29/06/2019

Results until end of epidemiologic week 26(2019)

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

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)	4	5	1	0	0	0	414
Helen Joseph-Rahima Moosa (GP)	0	35	1	0	0	0	575
Klerksdorp-Tshepong (NW)	0	44	0	0	0	0	378
Mapulaneng-Matikwana (MP)	0	9	0	0	1	0	244
Red Cross (WC)	3	31	1	0	0	0	581
Mitchell's Plain (WC)	2	15	2	0	0	0	183
Total:	9	139	5	0	1	0	2375

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

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

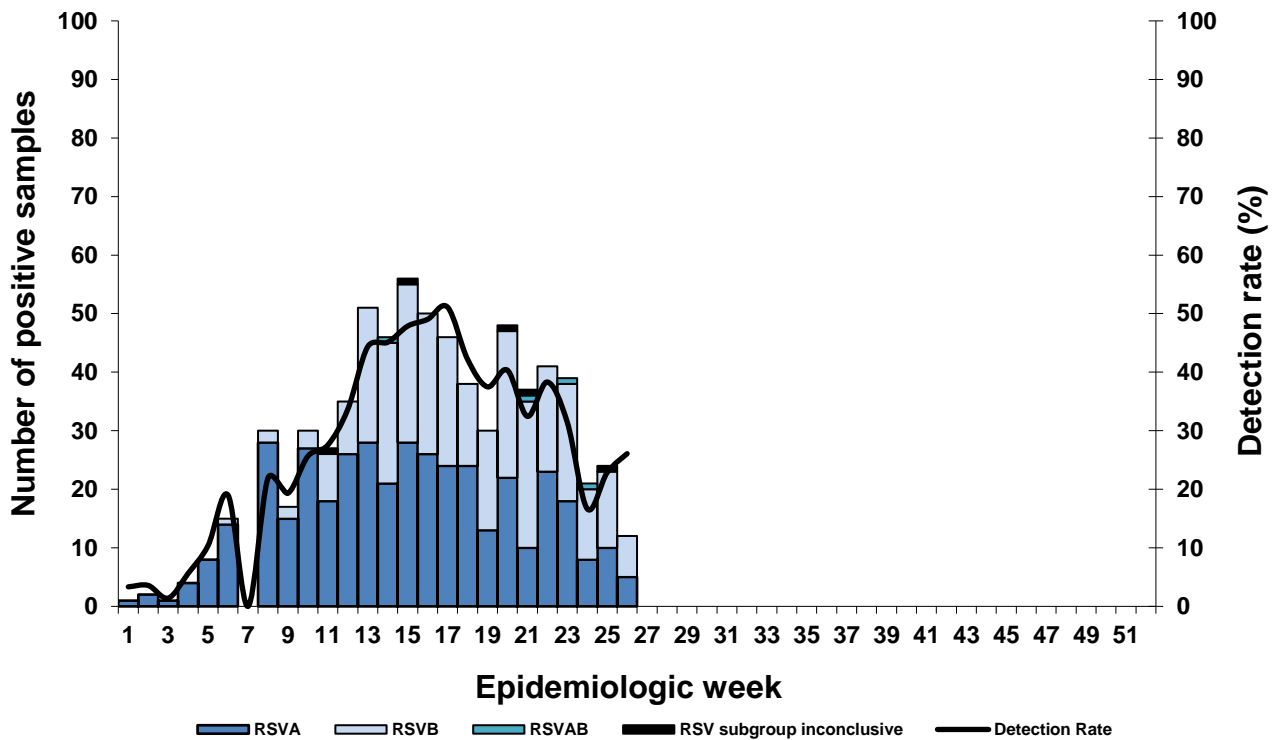
Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 29/06/2019

Results until end of epidemiologic week 26(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	RSV subgroup inconclusive	Total samples
Edendale (KZ)	121	5	0	1	414
Helen Joseph-Rahima Moosa (GP)	106	53	1	0	575
Klerksdorp-Tshepong (NW)	48	8	0	1	378
Mapulaneng-Matikwana (MP)	53	1	0	0	244
Red Cross (WC)	57	185	3	3	581
Mitchell's Plain (WC)	19	44	0	0	183
Total:	404	296	4	5	2375

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

Respiratory Pathogen Surveillance

Reporting period 01/01/2019 to 29/06/2019

Results until end of epidemiologic week 26(2019)

National syndromic surveillance for pneumonia

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

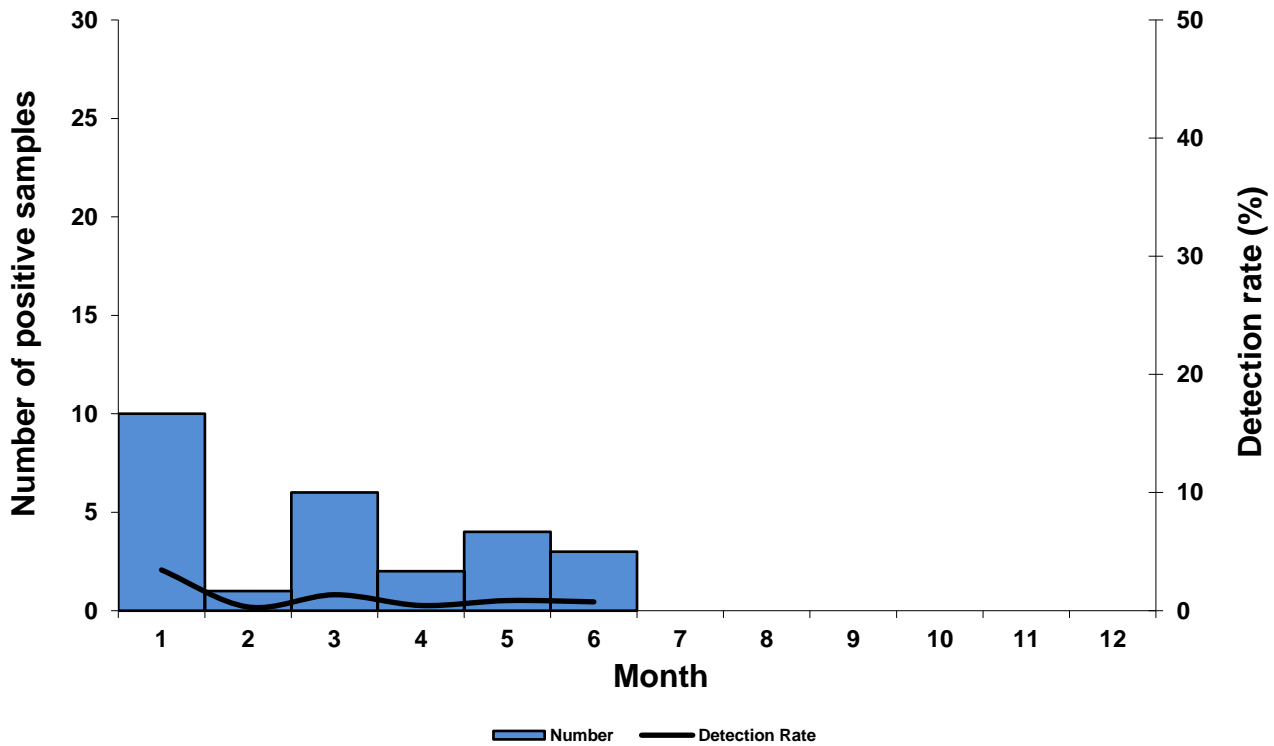


Table 9. Cumulative number of *B. pertussis* identified and total number of samples tested by hospital and province

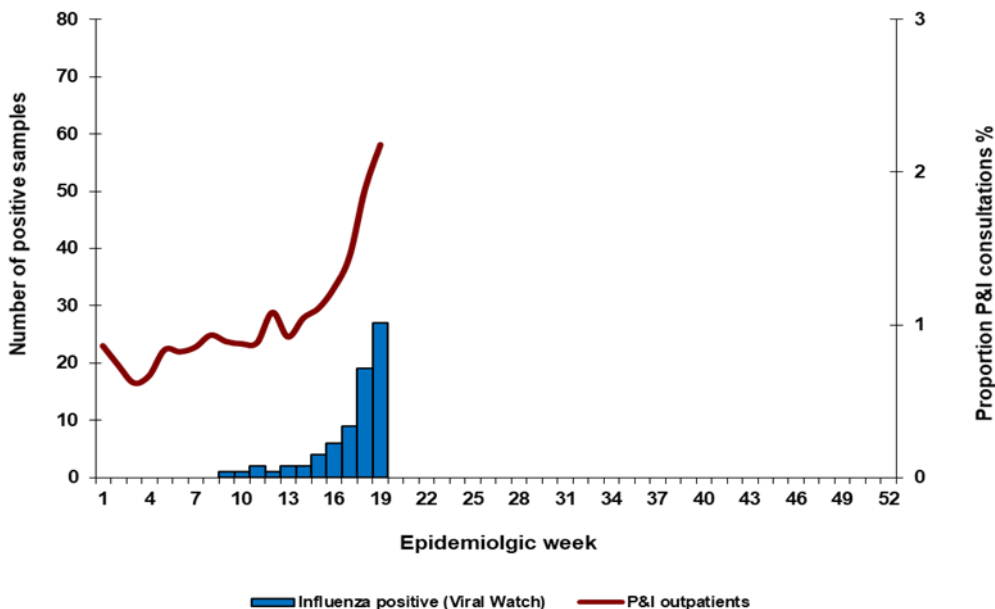
Hospital (Province)	<i>B. pertussis</i> Positive**	Total samples
Edendale (KZ)	5	413
Helen Joseph-Rahima Moosa (GP)	7	573
Klerksdorp-Tshepong (NW)	2	377
Mapulaneng-Matikwana (MP)	4	244
Red Cross (WC)	8	581
Mitchell's Plain (WC)	0	182
Total:	26	2370

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

**86 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.

Private hospital consultations

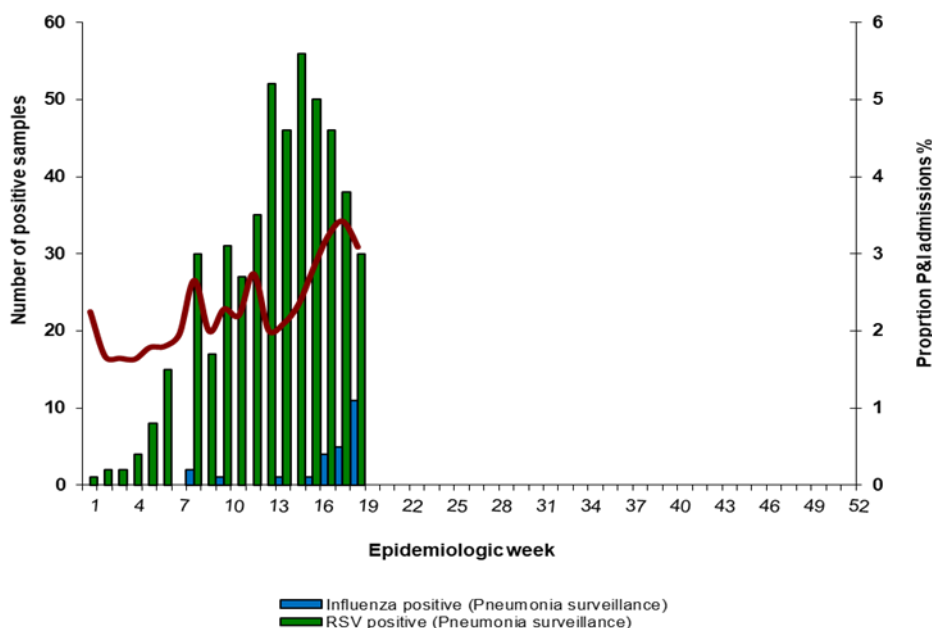
Figure 9. Number of private hospital outpatient consultations* with a diagnosis of pneumonia and influenza (P&I) and viral isolates**



* 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.