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Respiratory Pathogen Surveillance

Programme Descriptions

Programme	ILI	Viral Watch	National syndromic surveillance for pneumonia	Private hospital consultations
Start year	2012	1984	2009	2002
Provinces*	KZ NW MP	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 ($\geq 38^{\circ}\text{C}$) 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	≥ 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 Induced/expectorated sputum	Not applicable
Main pathogens tested**	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 29/04/2018

Results until end of epidemiologic week 17 (2018)

Comments:

Influenza

The 2018 influenza season has not started as yet. However, the number of patients testing positive for influenza and influenza detection rate from ILI sites has started to increase.

ILI programme: From the 1st January 2018 to date, specimens from 383 patients were received from 3 ILI sites.

Influenza A(H1N1)pdm09 was detected in 25 patients.

Viral Watch programme: During the same period, specimens from 105 patients were received from Viral Watch sites. Of these 14 tested positive for influenza, six influenza A(H1N1)pdm09, three influenza A(H3N2) and five influenza B. In addition eight patients who had a history of international travel tested positive for influenza, two were positive for Influenza A(H1N1)pdm and six were positive for influenza B.

Pneumonia surveillance: In this same period, specimens from 1556 patients with severe respiratory illness (SRI) were received from the 6 sentinel sites. Influenza A(H1N1)pdm09 was detected in eleven patients.

Respiratory syncytial virus

The 2018 RSV season which started in week six (week starting 05 February) when the RSV detection rate rose above 10% in the pneumonia surveillance programme continues although the detection rate has started to decrease.

From the 1st January 2018 to date RSV was detected in specimens of 73 patients in the ILI programme, and 449 from patients in the pneumonia surveillance programme.

During the same period, 10 specimens from viral watch surveillance programme sites tested positive for RSV.

Streptococcus pneumoniae

Pneumonia surveillance: From the 1st January 2018 to date, blood specimens from 618 patients from 3 sentinel sites were tested for *S. pneumoniae* which was detected in 18 (2.9 %) specimens.

Bordetella pertussis

ILI programme: From 1st January 2018 to date, nasopharyngeal/oropharyngeal specimens were tested from 383 patients for *B. pertussis*, one tested positive.

Pneumonia surveillance: During the same period, sputa and/or nasopharyngeal specimens were tested from 1556 patients for *B. pertussis* which was detected in 23 (1.5 %) specimens. The number of cases testing positive for *B. pertussis* continues to decrease compared to the past few months where an increase was noted, especially from the Western Cape site. <http://www.nicd.ac.za/index.php/increase-in-pertussis-whooping-cough-in-children-in-western-cape-province/>

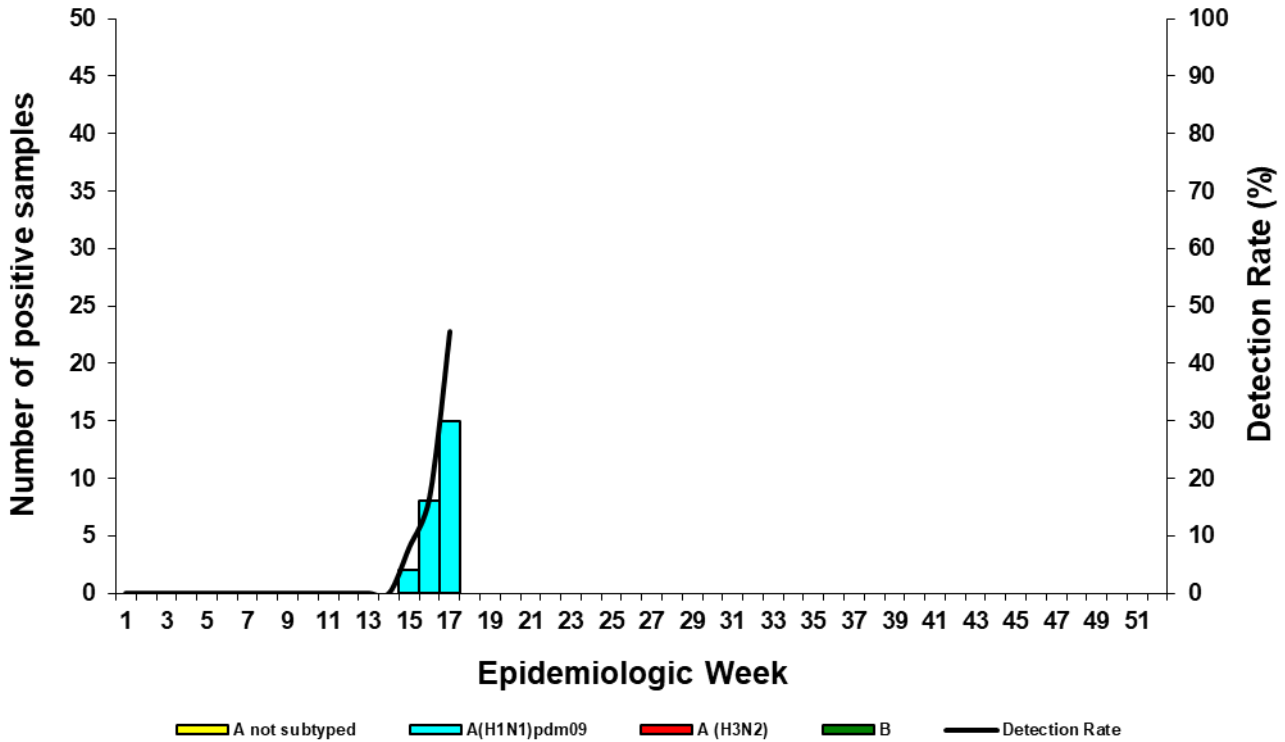
Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 29/04/2018

Results until end of epidemiologic week 17 (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)					123
Edendale Gateway Clinic (KZ)		24			165
Jouberton Clinic (NW)		1			95
Total:	0	25	0	0	383

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

Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 29/04/2018

Results until end of epidemiologic week 17 (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

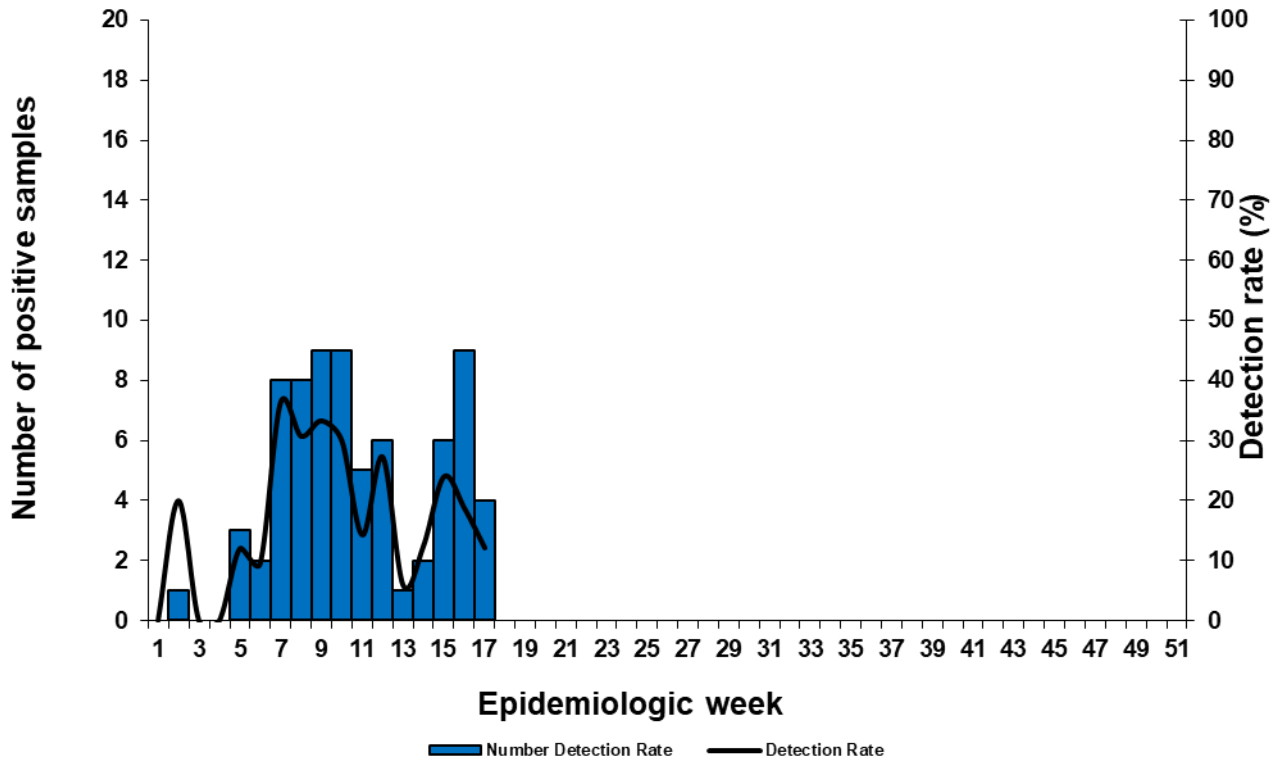


Table 2. Cumulative number of respiratory syncytial virus identified and total number of samples tested by clinic and province

Clinic (Province)	RSV Positive	Total samples
Agincourt Clinic (MP)	37	123
Edendale Gateway Clinic (KZ)	25	165
Jouberton Clinic (NW)	11	95
Total:	73	383

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

Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 29/04/2018

Results until end of epidemiologic week 17 (2018)

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

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

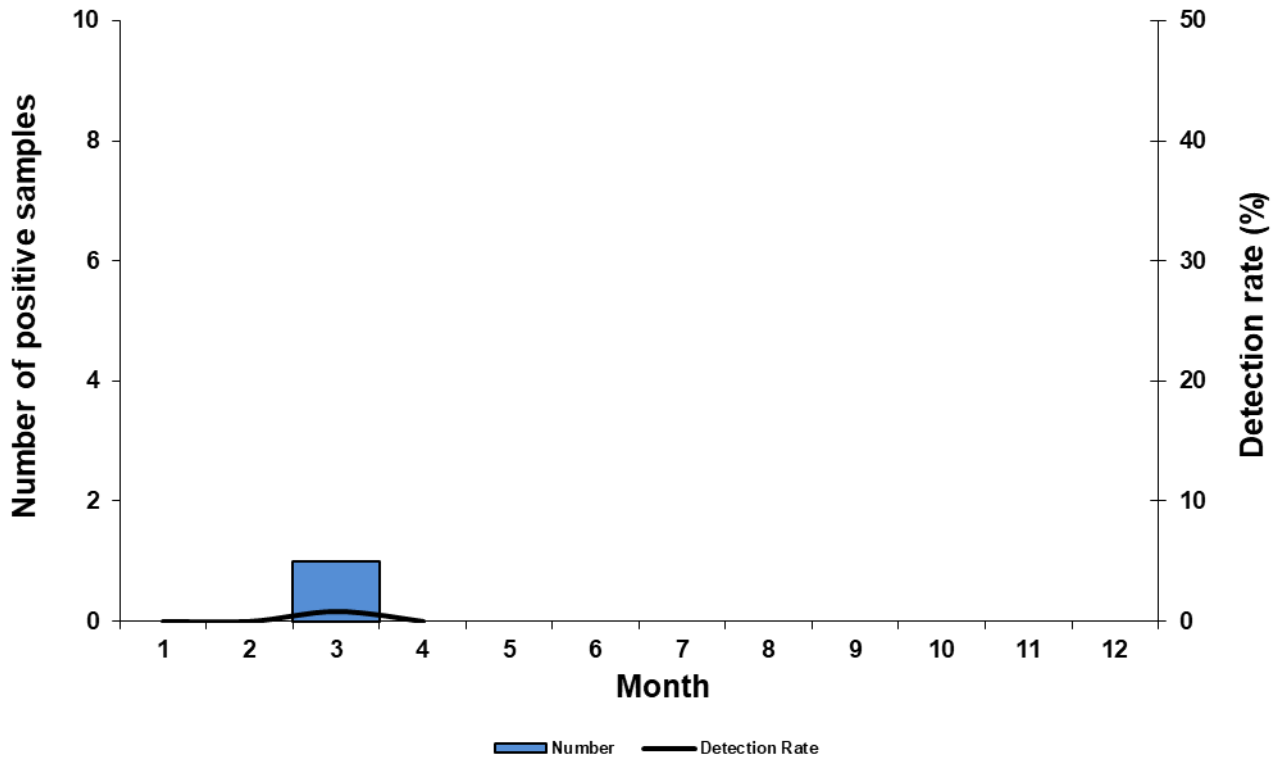


Table 3 Cumulative number of *B. pertussis* identified and total number of samples tested by province

Clinic (Province)	<i>B. pertussis</i> Positive	Total samples
Agincourt Clinic (MP)		123
Edendale Gateway Clinic (KZ)	1	165
Jouberton Clinic (NW)		95
Total:	1	383

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

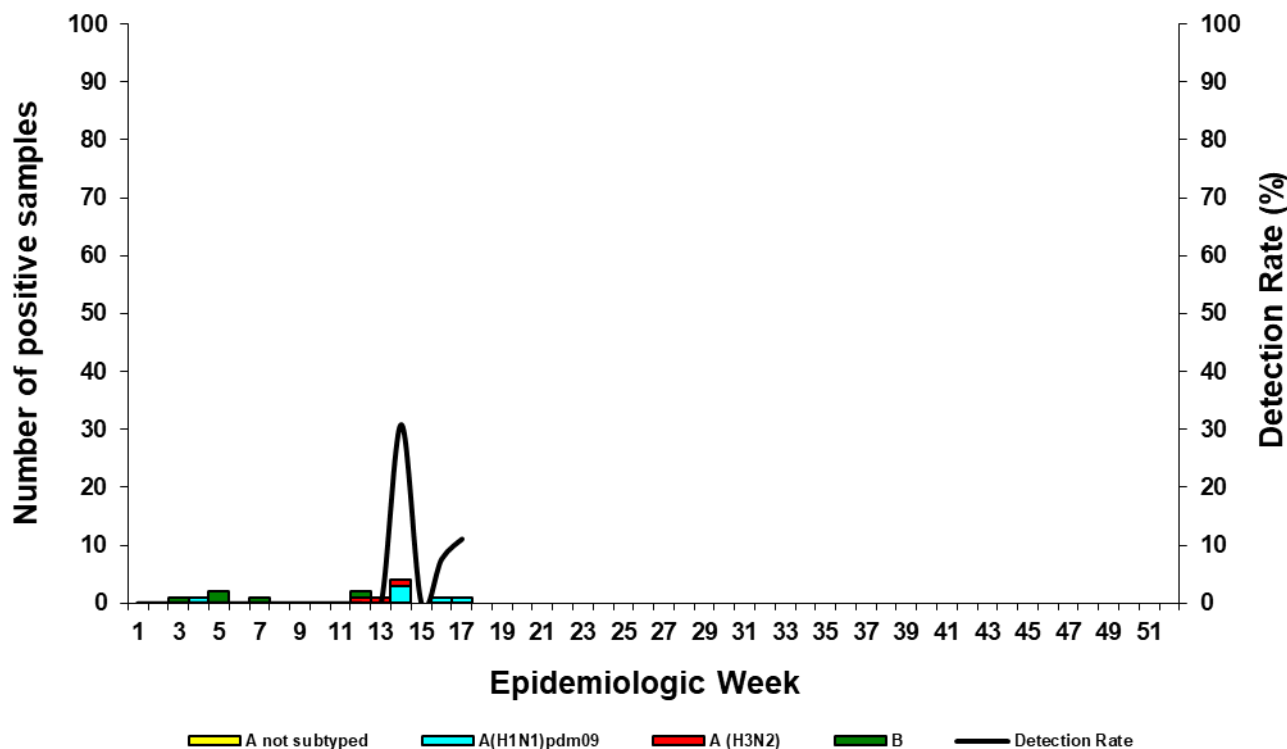
Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 29/04/2018

Results until end of epidemiologic week 17 (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 104 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					7
Free State					2
Gauteng		3	1	3	54
Kwa-Zulu Natal					0
Limpopo					4
Mpumalanga		3	1		12
North West					1
Northern Cape					2
Western Cape			1	2	23
Total:	0	6	3	5	105

From 01 January 2018 to date, 47 patients were tested for influenza at the time of entry into South Africa following travel abroad and 18 have tested influenza positive.

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

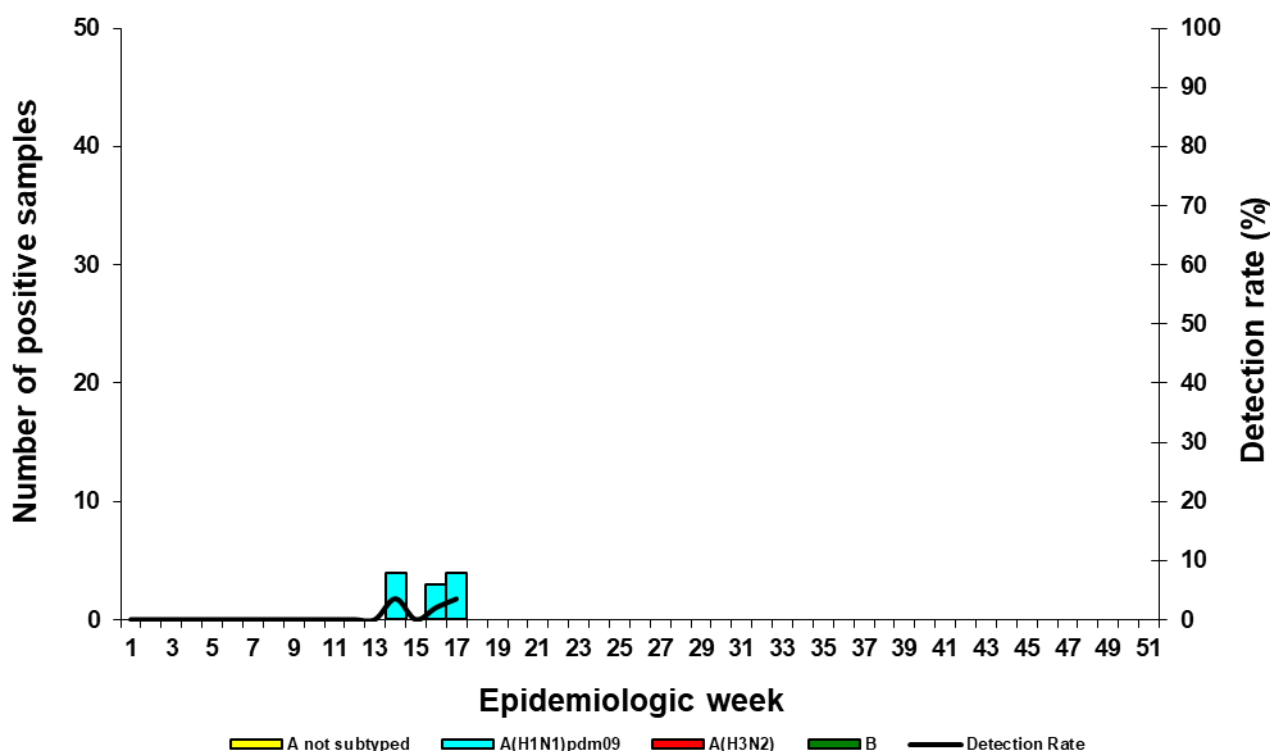
Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 29/04/2018

Results until end of epidemiologic week 17 (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

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)		6			299
Helen Joseph-Rahima Moosa (GP)		2			371
Klerksdorp-Tshepong (NW)		0			225
Mapulaneng-Matikwana (MP)		1			94
Red Cross (WC)		1			357
Mitchell's Plain (WC)		1			210
Total:		11	0	0	1556

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

Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 29/04/2018

Results until end of epidemiologic week 17 (2018)

National syndromic surveillance for pneumonia

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

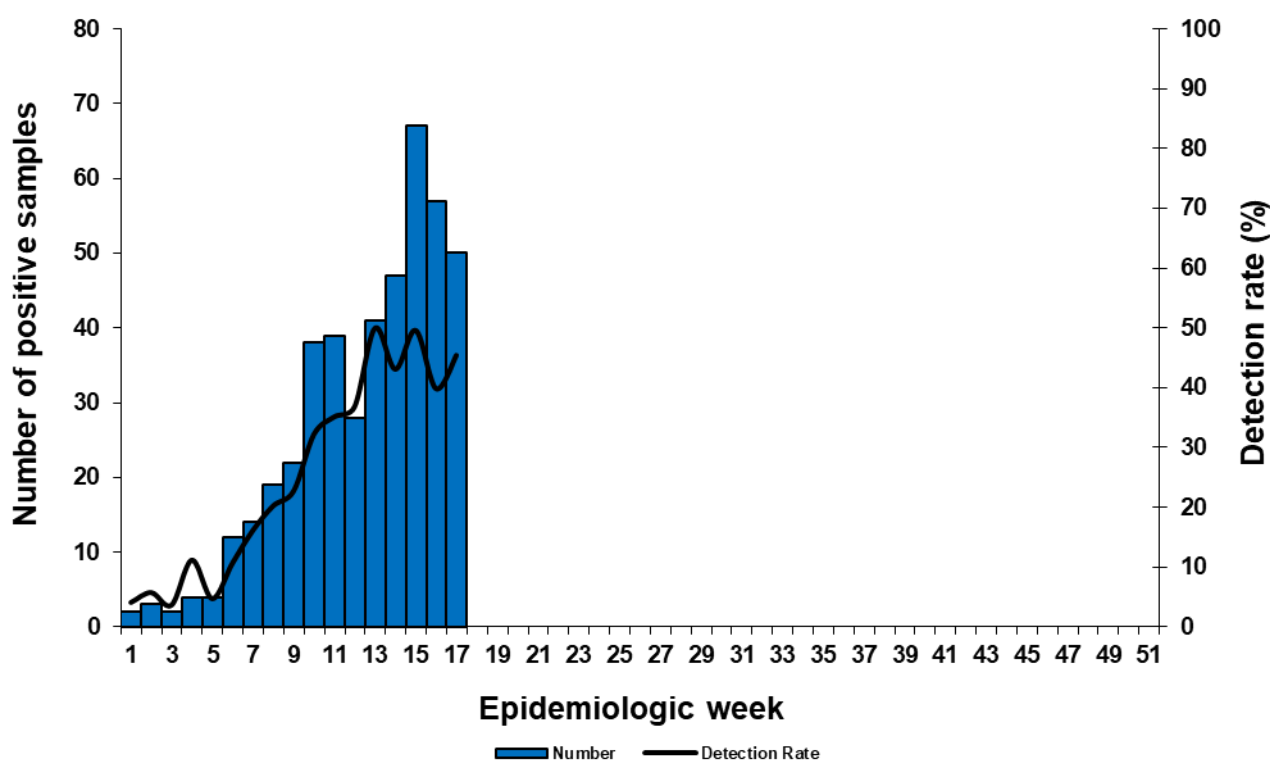


Table 6: Cumulative number of respiratory syncytial virus identified and total number of samples tested by hospital

Hospital (Province)	RSV Positive	Total samples
Edendale (KZ)	73	299
Helen Joseph-Rahima Moosa (GP)	132	371
Klerksdorp-Tshepong (NW)	23	225
Mapulaneng-Matikwana (MP)	44	94
Red Cross (WC)	118	357
Mitchell's Plain (WC)	59	210
Total:	449	1556

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

Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 29/04/2018

Results until end of epidemiologic week 17 (2018)

National syndromic surveillance for pneumonia

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

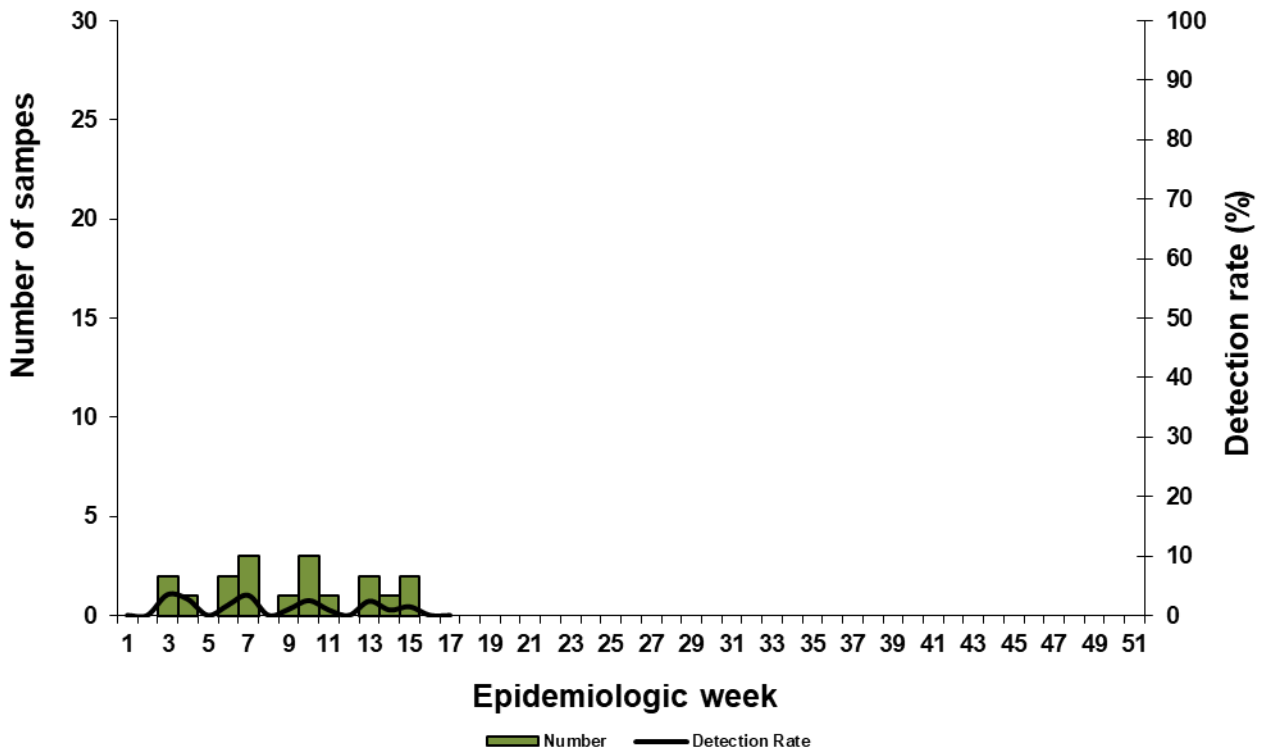


Table 7. Cumulative number of *S. pneumoniae* identified and total number of samples tested by hospital and province

Hospital (Province)	<i>S. pneumoniae</i> Positive	Total samples
Edendale (KZ)	3	299
Klerksdorp-Tshepong (NW)	8	225
Mapulaneng-Matikwana (MP)	7	94
Total:	18	618

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 29/04/2018

Results until end of epidemiologic week 17 (2018)

National syndromic surveillance for pneumonia

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

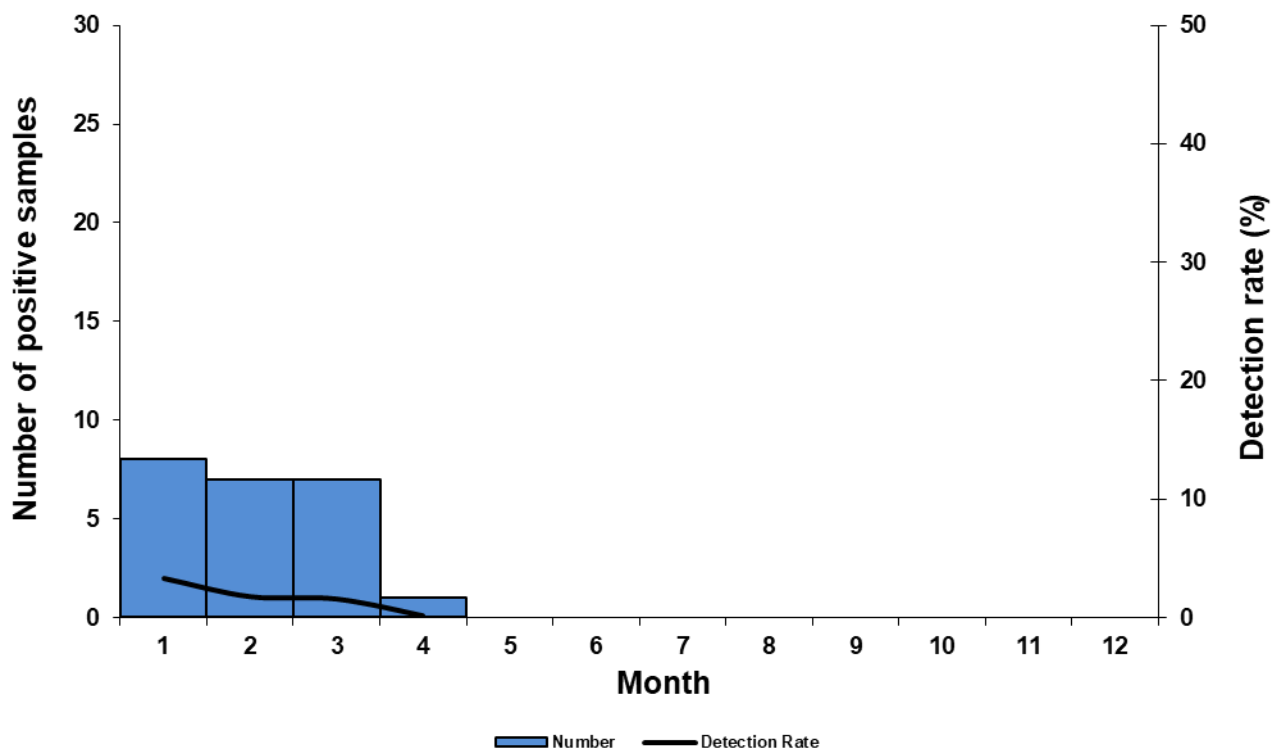


Table 9. Cumulative number of *B. pertussis* identified and total number of samples tested by hospital and province

Hospital (Province)	<i>B. pertussis</i> Positive	Total samples
Edendale (KZ)	4	299
Helen Joseph-Rahima Moosa (GP)	4	371
Klerksdorp-Tshepong (NW)	1	225
Mapulaneng-Matikwana (MP)	1	94
Red Cross (WC)	11	357
Mitchell's Plain (WC)	2	210
Total:	23	1556

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

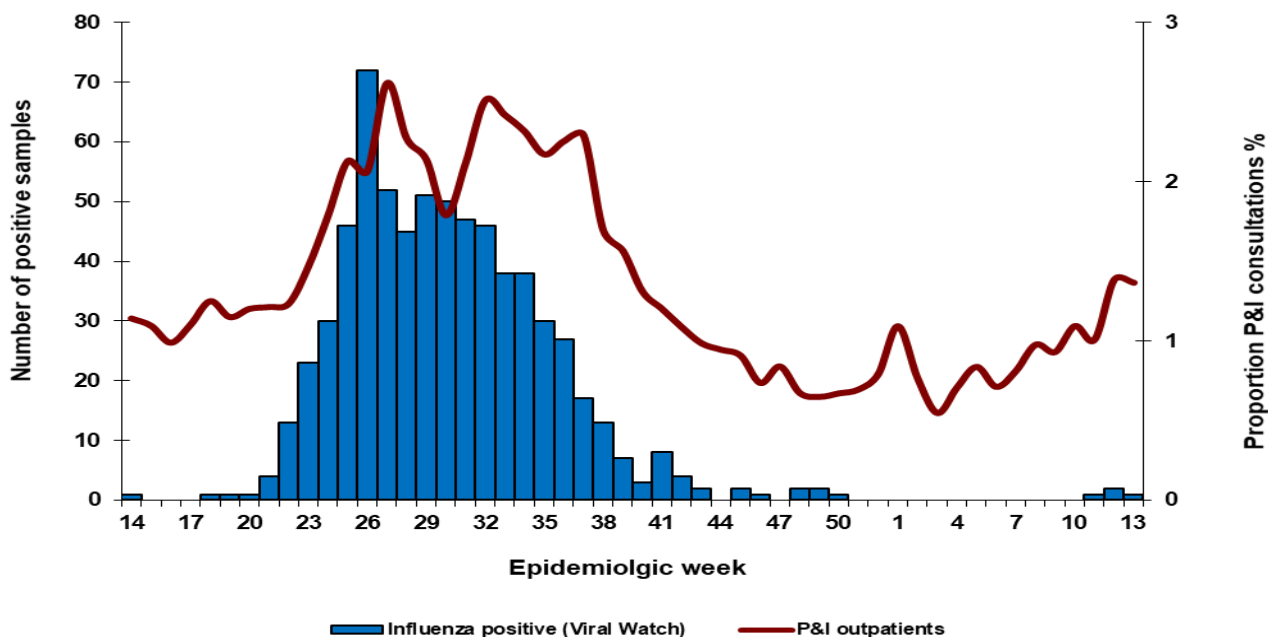
Respiratory Pathogen Surveillance

Reporting period 02/04/2017 to 01/04/2018

Results until end of epidemiologic week 13 (2018)

Private hospital consultations

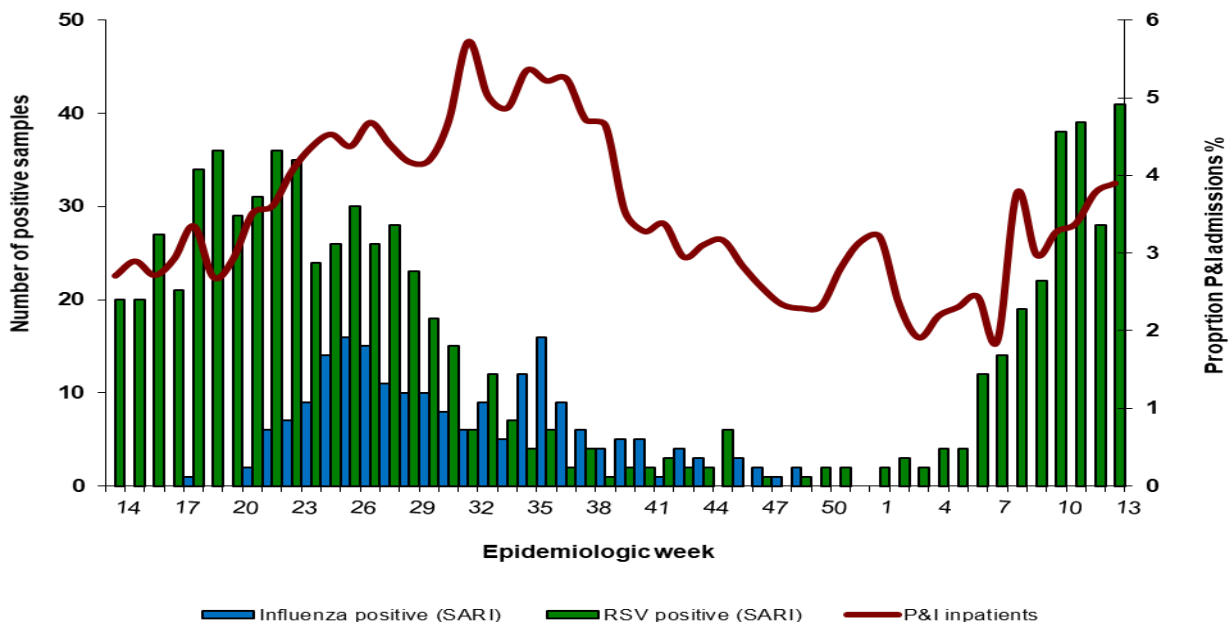
Figure 9. Number of private hospital outpatient consultations* with a diagnosis of pneumonia and influenza (P&I) and viral isolates**



* 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.