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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 03/06/2018

Results until end of epidemiologic week 22 (2018)

Comments:

Influenza

The 2018 influenza season continues. The 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.

ILI programme: In 2018 to date, specimens from 498 patients were received from 3 ILI sites. Influenza was detected in 44 specimens, all identified as influenza A(H1N1)pdm09.

Viral Watch programme: During the same period, specimens from 332 patients were received from Viral Watch sites. Since April, when the number of specimens received started to increase, influenza has been detected in 101 specimens, 98 of which were identified as influenza A(H1N1)pdm09, one influenza A(H3N2) and two as influenza B.

In addition, before the start of this year's influenza season: influenza A(H1N1)pdm09 was detected in four, A(H3N2) in three, and influenza B in 14 patients, most of whom had a history of travel or contact with tourists.

Pneumonia surveillance: In this time period, specimens from 2124 patients with severe respiratory illness (SRI) were received from the 6 sentinel sites. Influenza was detected in 55 specimens, all identified as A(H1N1)pdm09.

Respiratory syncytial virus

The 2018 RSV season started in week 9 (week starting 26 February) when RSV detections in pneumonia surveillance rose above the seasonal threshold, as determined by the Moving Epidemic Method, and is ongoing. The highest detection rate to date, was in week 13 (week starting 26 March) i.e. 41/82 (50%).

In 2018 to date, RSV has been detected in the specimens of 86 patients in the ILI programme, and 681 from patients in the pneumonia surveillance programme.

During the same period, 28 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 24 (3.8 %) specimens.

Bordetella pertussis

ILI programme: From 1st January 2018 to date, nasopharyngeal/oropharyngeal specimens were tested from 498 patients for *B. pertussis*, two tested positive.

Pneumonia surveillance: During the same period, sputa and/or nasopharyngeal specimens were tested from 2124 patients for *B. pertussis* which was detected in 29 (1.4 %) 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/>

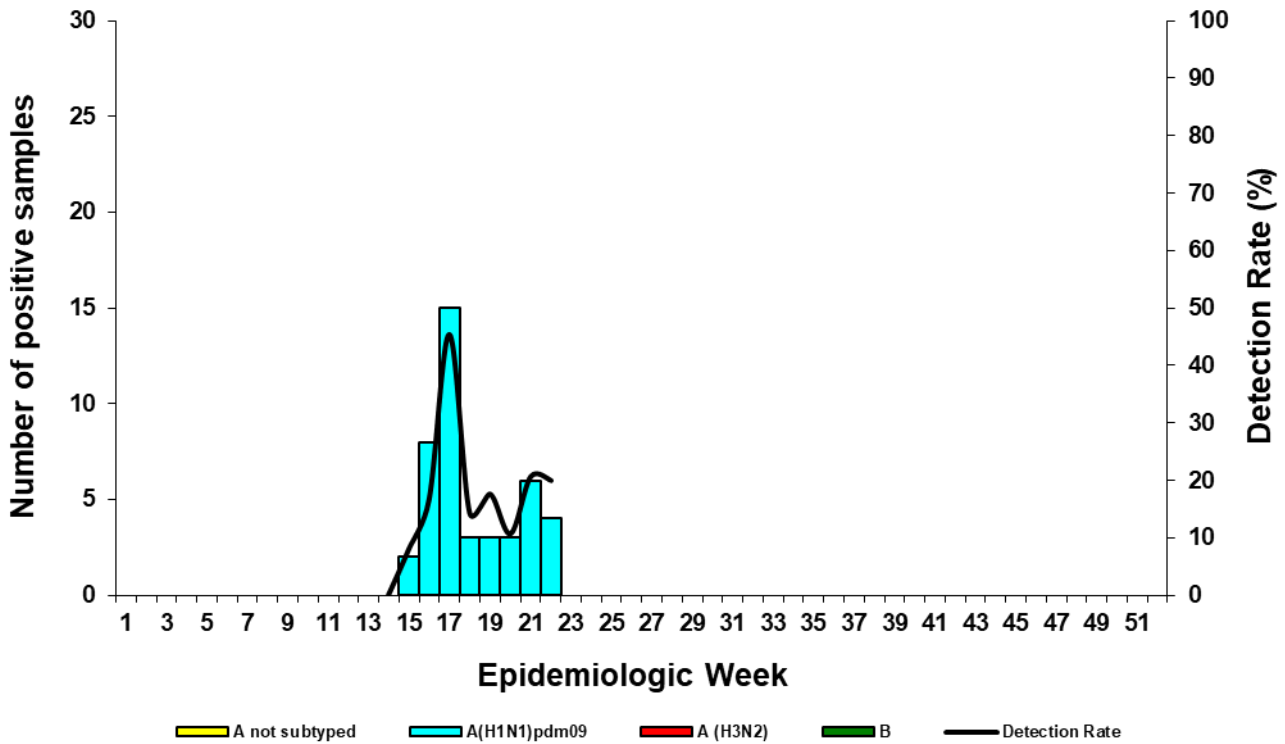
Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 03/06/2018

Results until end of epidemiologic week 22 (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)		3			141
Edendale Gateway Clinic (KZ)		36			229
Jouberton Clinic (NW)		5			128
Total:	0	44	0	0	498

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

Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 03/06/2018

Results until end of epidemiologic week 22 (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

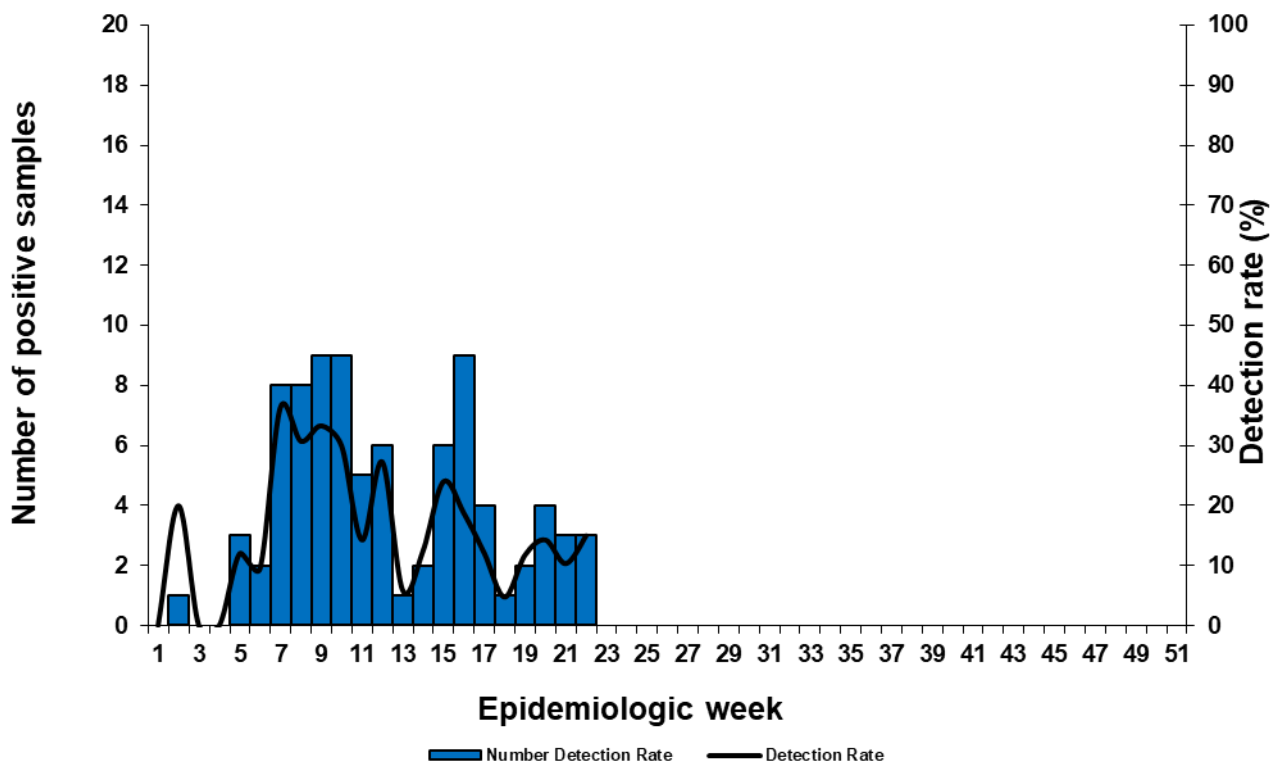


Table 2. Cumulative number of respiratory syncytial virus identified and total number of samples tested by clinic and province

Clinic (Province)	RSV Positive	Total samples
Agincourt Clinic (MP)	38	141
Edendale Gateway Clinic (KZ)	27	229
Jouberton Clinic (NW)	21	128
Total:	86	498

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

Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 03/06/2018

Results until end of epidemiologic week 22 (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

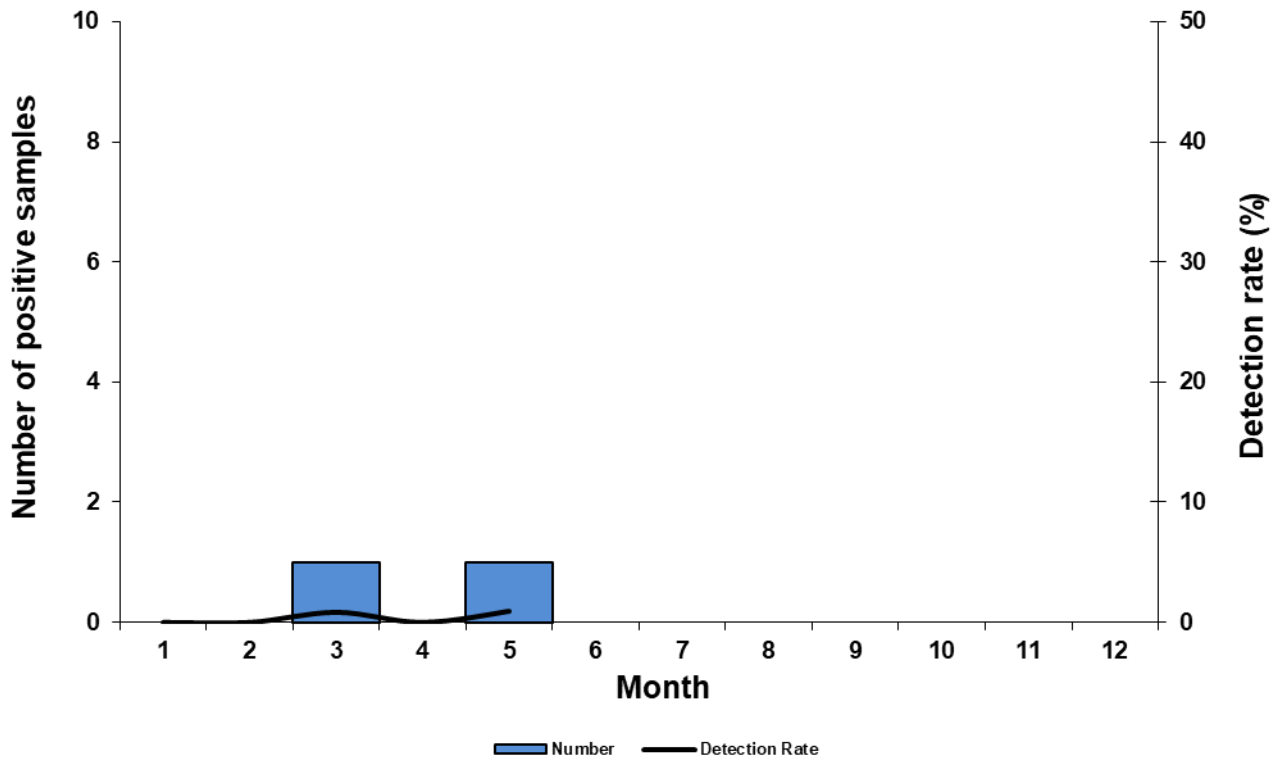


Table 3 Cumulative number of *B. pertussis* identified and total number of samples tested by province

Clinic (Province)	<i>B. pertussis</i> Positive	Total samples
Agincourt Clinic (MP)		141
Edendale Gateway Clinic (KZ)	1	229
Jouberton Clinic (NW)	1	128
Total:	2	498

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

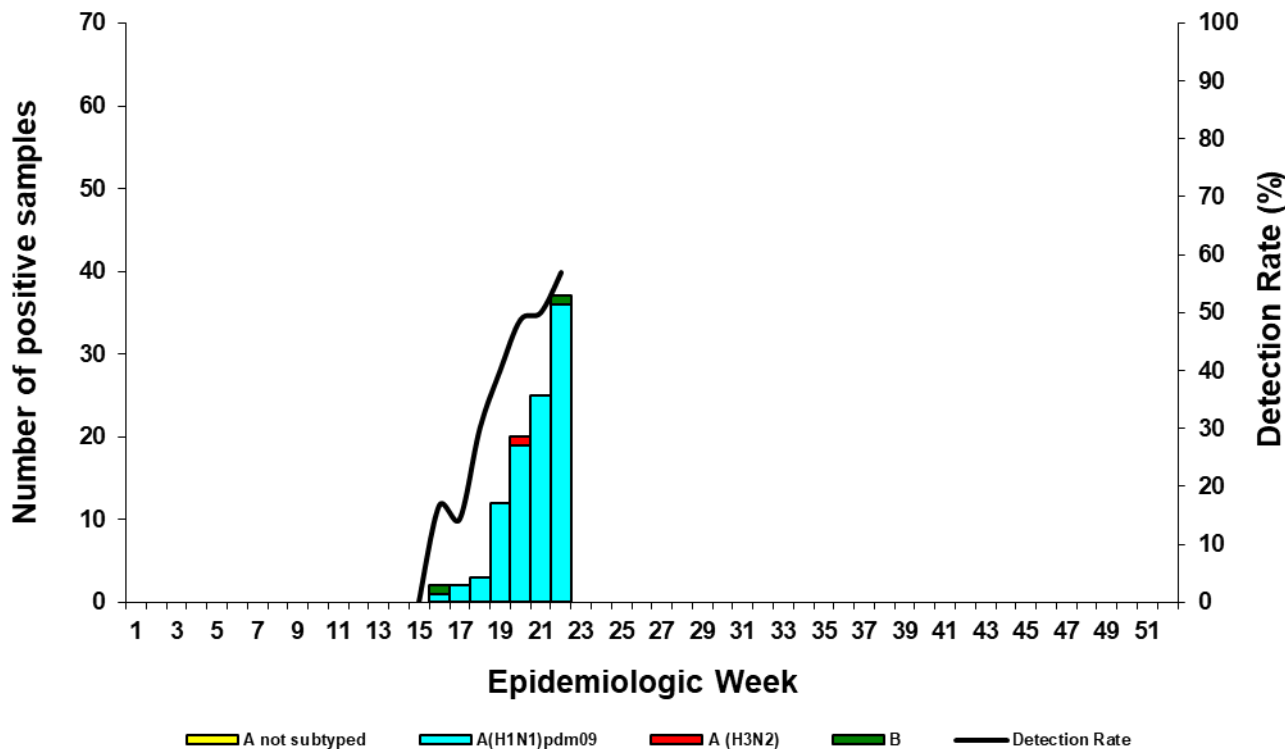
Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 03/06/2018

Results until end of epidemiologic week 22 (2018)

Influenza-like illness (ILI) surveillance Viral Watch

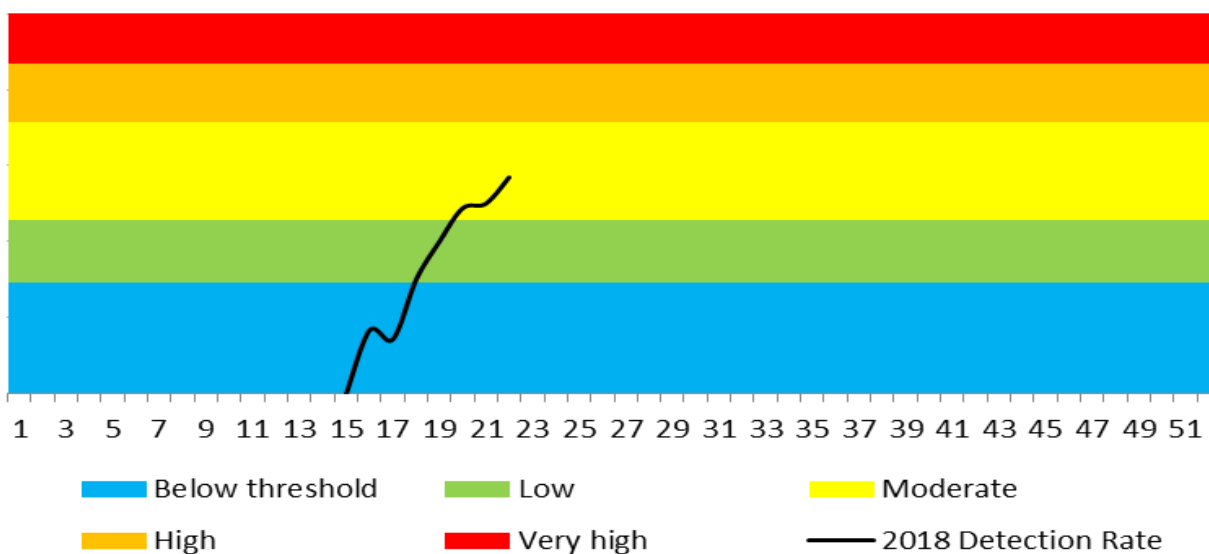
Figure 4. Number of positive samples* by influenza types and subtypes and detection rate by week**



*Specimens from patients with Influenza-like illnesses at 90 sentinel sites in 8 provinces

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

Figure 5. ILI surveillance Viral Watch percentage influenza detections and epidemic thresholds*



*Thresholds based on 2007-20017 data (Excluding 2009)

Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 03/06/2018

Results until end of epidemiologic week 22 (2018)

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		6			15
Free State					3
Gauteng		71	1	1	174
Kwa-Zulu Natal					0
Limpopo		4			5
Mpumalanga		6			35
North West					3
Northern Cape		1			8
Western Cape		10			89
Total:	0	98	1	2	332

From 01 January 2018 to date, 68 patients were tested for influenza at the time of entry into South Africa following travel abroad and 22 have tested influenza positive.

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

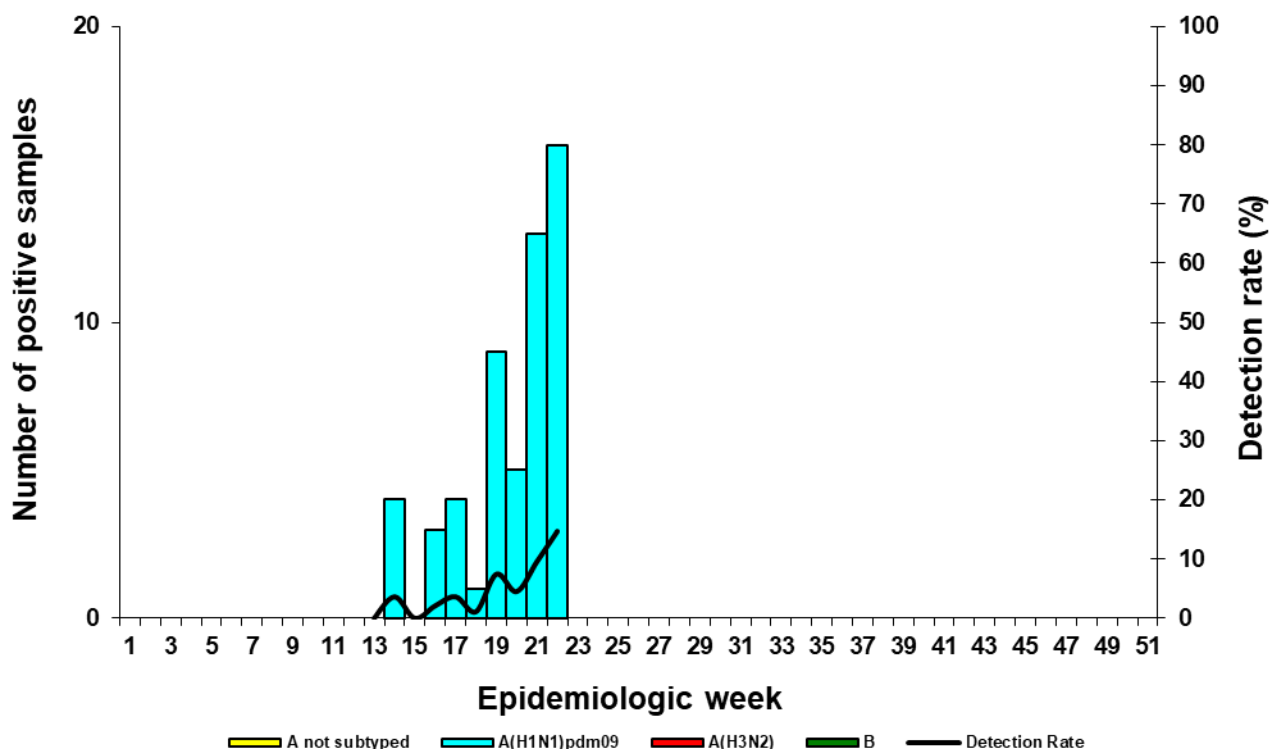
Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 03/06/2018

Results until end of epidemiologic week 22 (2018)

National syndromic surveillance for pneumonia

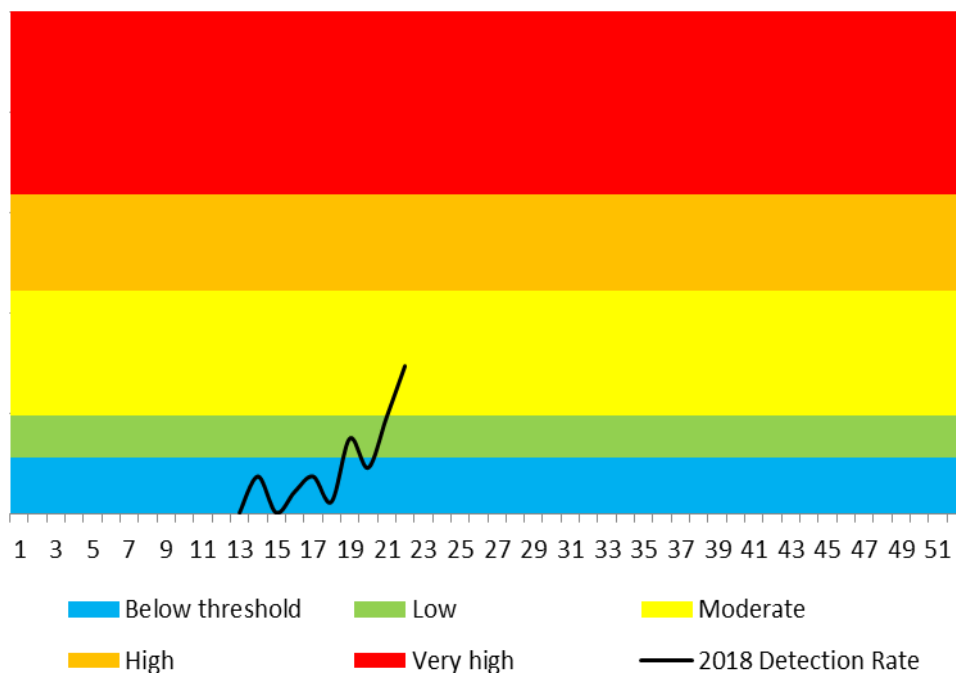
Figure 6. Number of positive samples* by influenza types and A not typed as yet and detection rate by week**



*Specimens from patients hospitalised with pneumonia at 6 sentinel sites in 5 provinces

**Only reported for weeks with >10 specimens submitted

Figure 7. National syndromic surveillance for pneumonia percentage influenza detections and epidemic thresholds*



*Thresholds based on 2010-2017 data

Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 03/06/2018

Results until end of epidemiologic week 22 (2018)

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)		24			368
Helen Joseph-Rahima Moosa (GP)		16			490
Klerksdorp-Tshepong (NW)		1			302
Mapulaneng-Matikwana (MP)		3			107
Red Cross (WC)		5			559
Mitchell's Plain (WC)		6			298
Total:		55	0	0	2124

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

Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 03/06/2018

Results until end of epidemiologic week 22 (2018)

National syndromic surveillance for pneumonia

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

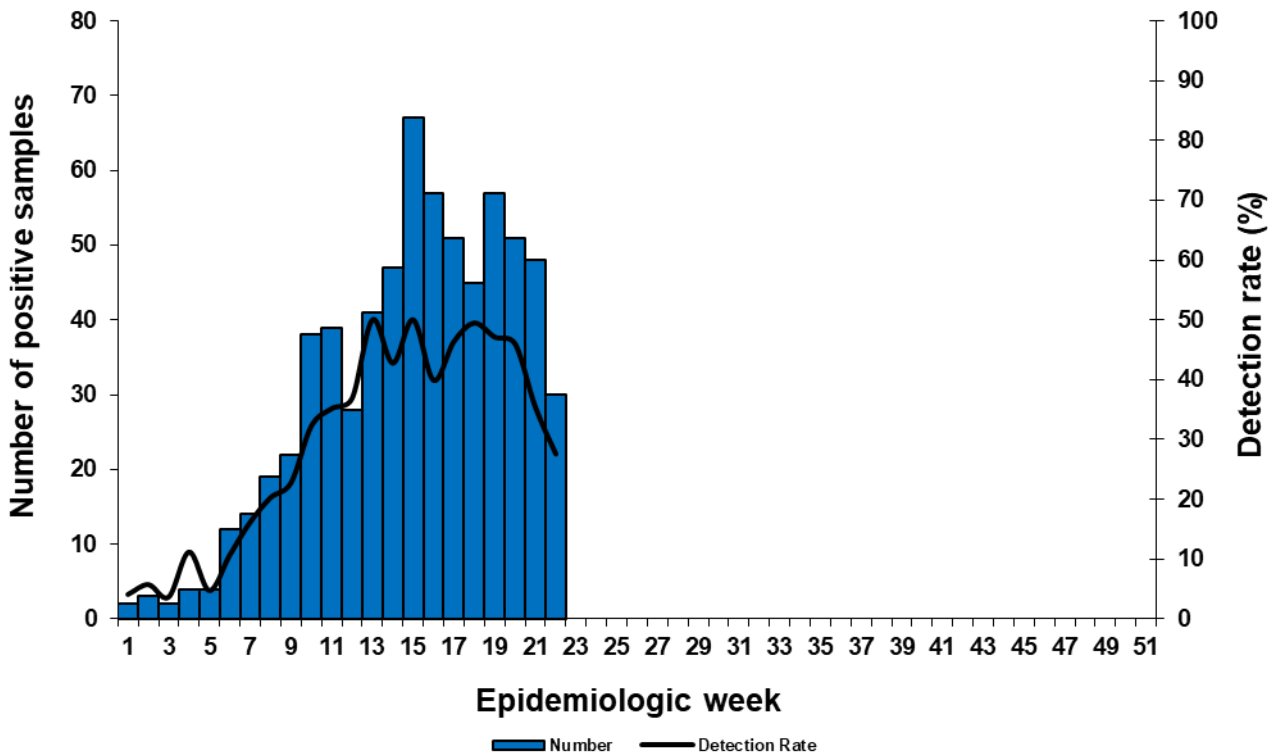


Table 6: Cumulative number of respiratory syncytial virus identified and total number of samples tested by hospital

Hospital (Province)	RSV Positive	Total samples
Edendale (KZ)	76	368
Helen Joseph-Rahima Moosa (GP)	150	490
Klerksdorp-Tshepong (NW)	37	302
Mapulaneng-Matikwana (MP)	45	107
Red Cross (WC)	256	559
Mitchell's Plain (WC)	117	298
Total:	681	2124

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

Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 03/06/2018

Results until end of epidemiologic week 22 (2018)

National syndromic surveillance for pneumonia

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

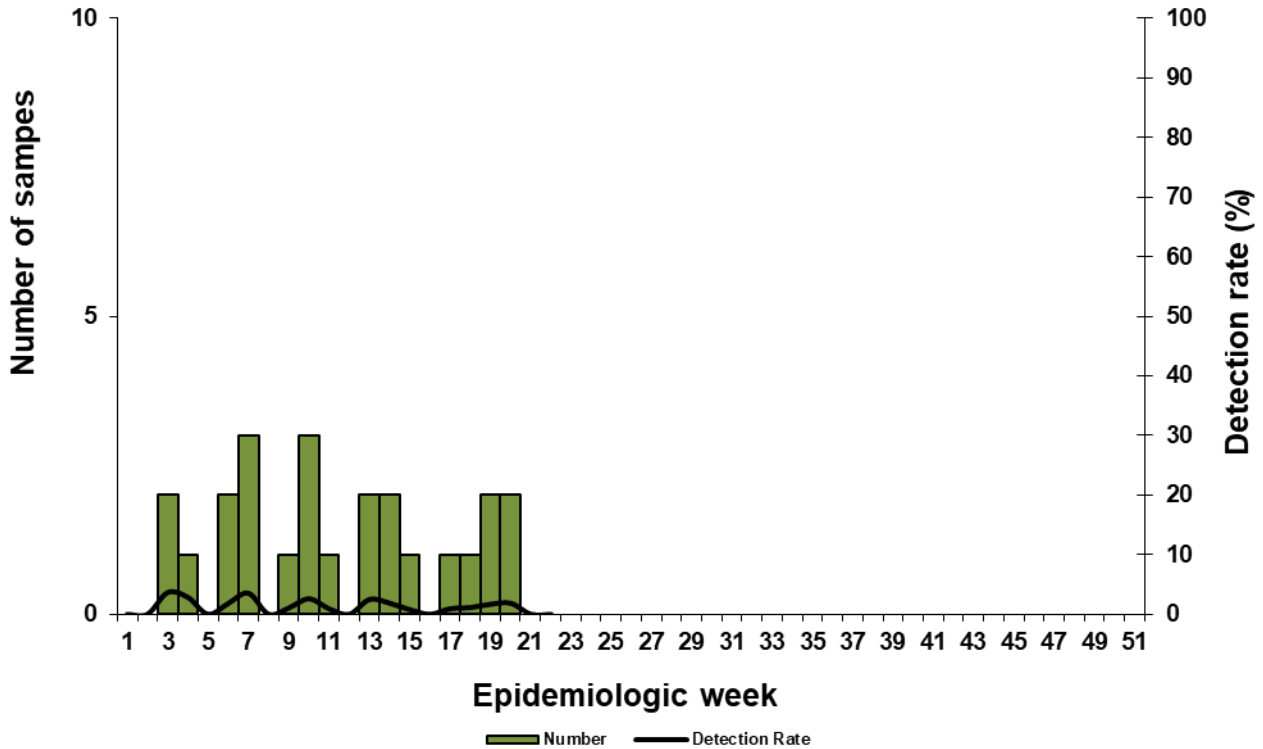


Table 7. Cumulative number of *S. pneumoniae* identified and total number of samples tested by hospital and province

Hospital (Province)	<i>S. pneumoniae</i> Positive	Total samples
Edendale (KZ)	3	299
Klerksdorp-Tshepong (NW)	13	225
Mapulaneng-Matikwana (MP)	8	94
Total:	24	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 03/06/2018

Results until end of epidemiologic week 22 (2018)

National syndromic surveillance for pneumonia

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

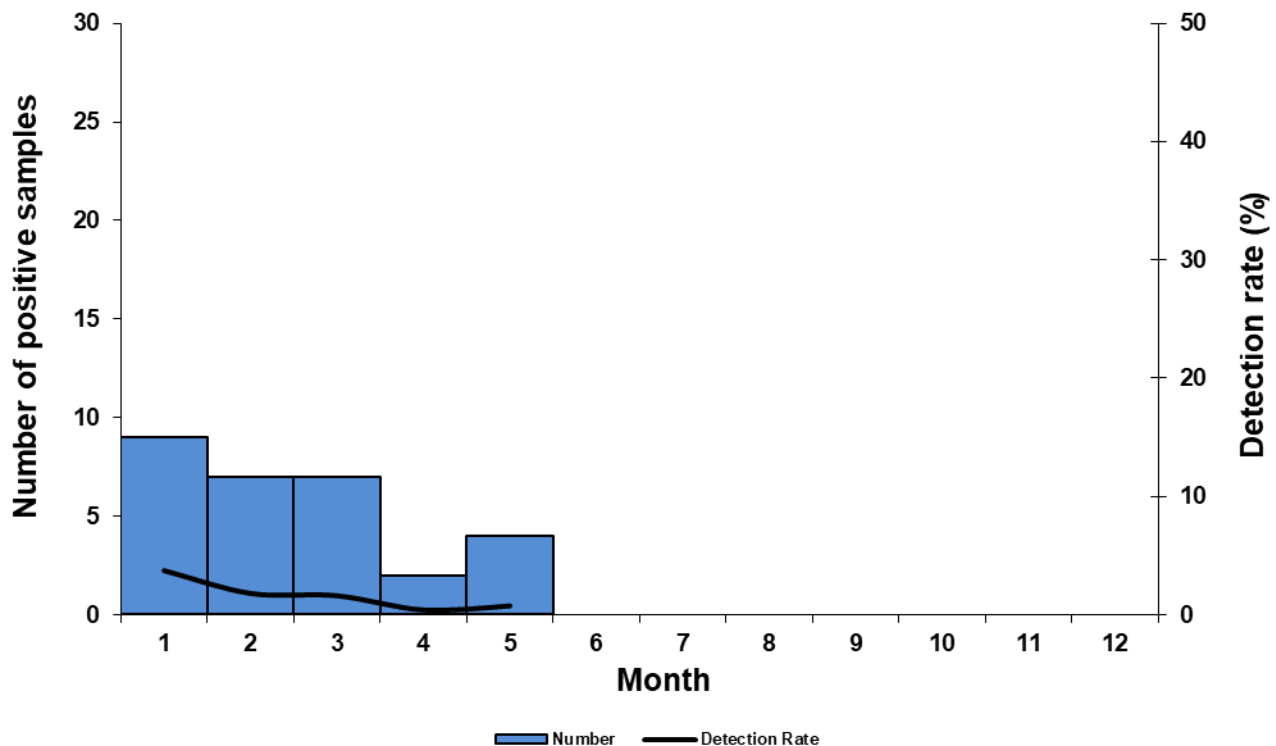


Table 9. Cumulative number of *B. pertussis* identified and total number of samples tested by hospital and province

Hospital (Province)	<i>B. pertussis</i> Positive	Total samples
Edendale (KZ)	5	368
Helen Joseph-Rahima Moosa (GP)	5	490
Klerksdorp-Tshepong (NW)	3	302
Mapulaneng-Matikwana (MP)	1	107
Red Cross (WC)	12	559
Mitchell's Plain (WC)	3	298
Total:	29	2124

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

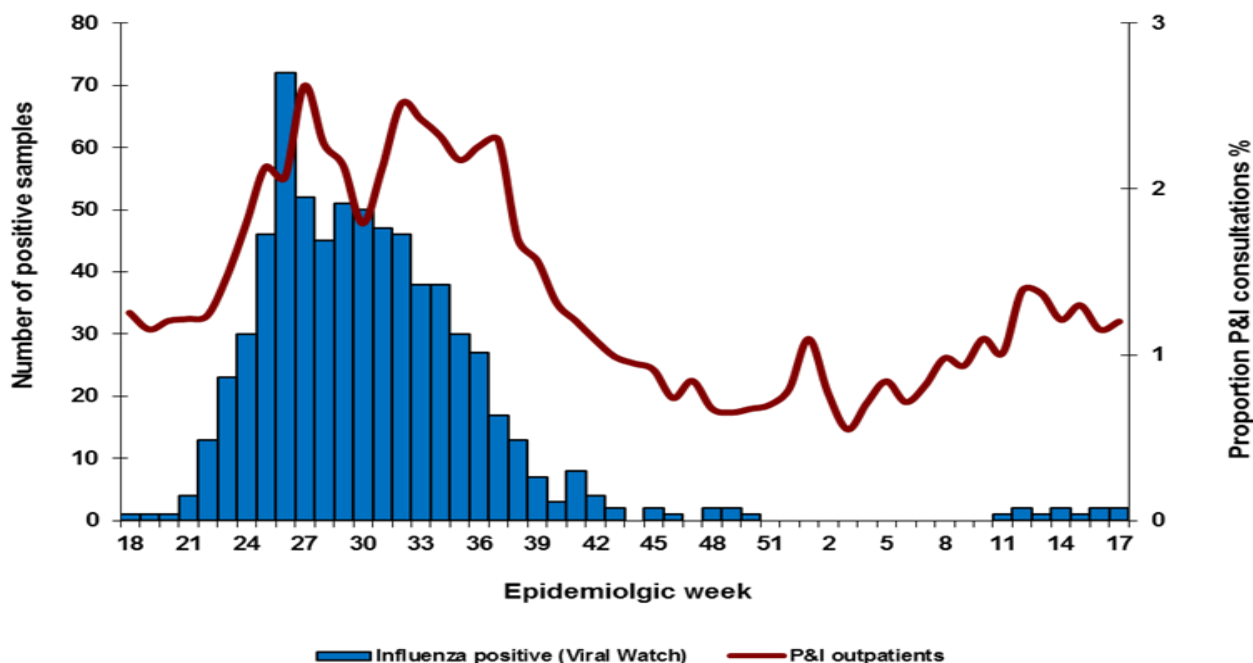
Respiratory Pathogen Surveillance

Reporting period 01/05/2017 to 29/04/2018

Results until end of epidemiologic week 17 (2018)

Private hospital consultations

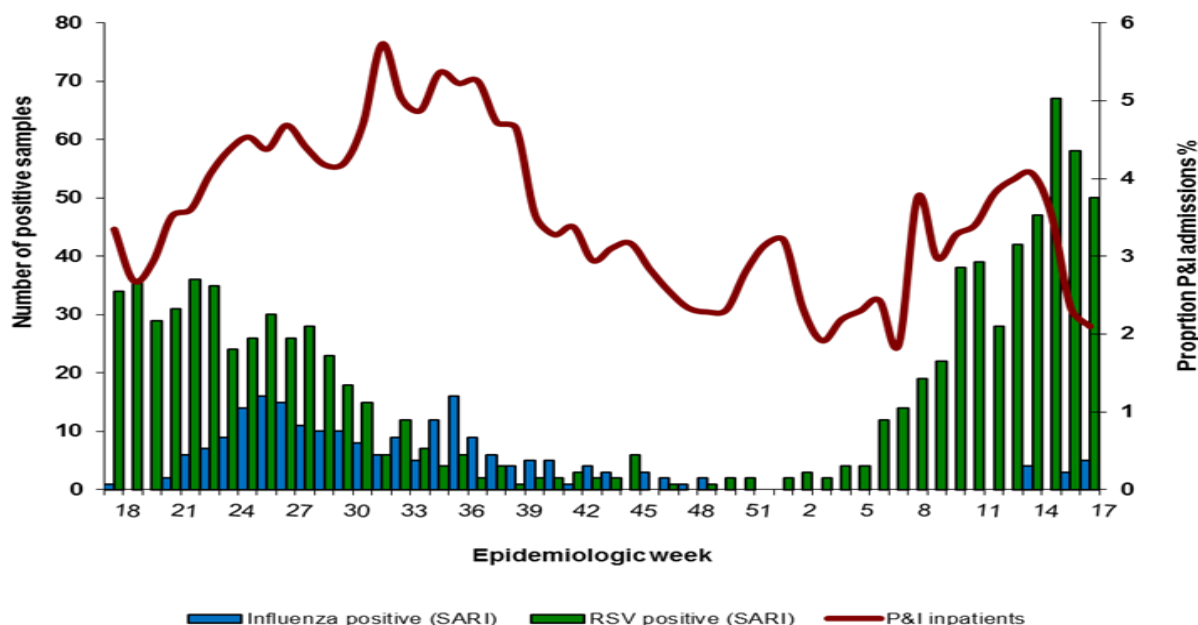
Figure 11. Number of private hospital outpatient consultations* with a diagnosis of pneumonia and influenza (P&I) and viral isolates**



* 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.