Weekly Influenza and Respiratory Syncytial Surveillance Report **Week 39, 2018**

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 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 Induced/expectorated sputum	Not applicable
Main pathogens tested**	INF RSV BP	INF RSV BP	INF RSV SP 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; SP: Streptococcus pneumoniae

Data are provisional as reported to date (Data for this report drawn on 03/10/2018). Number of consultations/specimens are reported/analysed by date of consultation/specimen collection.

Weekly Influenza and Respiratory Syncytial Surveillance Report

Reporting period 01/01/2018 to 30/09/2018 *Results until end of epidemiologic week 39(2018)*

Comments:

Influenza

The 2018 influenza 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. Influenza transmission is currently high, while impact is below threshold.

ILI programme: In 2018 to date, specimens from 757 patients were received from 3 ILI sites. Influenza was detected in 100 specimens, the majority (70) identified as influenza A(H1N1)pdm09, and 30 as influenza B.

Viral Watch programme: During the same period, specimens were received from 1324 patients from Viral Watch sites. Since April, when the number of specimens received started to increase, influenza has been detected in 631 specimens, 384 of which were identified as influenza A(H1N1)pdm09, 17 as influenza A(H3N2), 227 as influenza B, and three influenza A untyped due to low viral load.
In addition, influenza A(H3N2) was detected in three patients, A(H1N1)pdm09 in four, and influenza B in 14, before the start of the influenza season, most of whom had a history of travel or contact with tourists.

Pneumonia surveillance: In this time period, specimens from 3821 patients with severe respiratory illness (SRI) were received from the 6 sentinel sites. Influenza was detected in 271 specimens, 167 of which were identified as A(H1N1)pdm09, 101 as influenza B, and three influenza A untyped due to low viral load.

Respiratory syncytial virus

The 2018 RSV season which 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, ended in week 23 (week ending 10 June) although sporadic detections of RSV are still being made.
In 2018 to date, RSV has been detected in the specimens of 87 patients in the ILI programme, and 814 from patients in the pneumonia surveillance programme.
During the same period, 39 specimens from Viral Watch surveillance programme sites tested positive for RSV.

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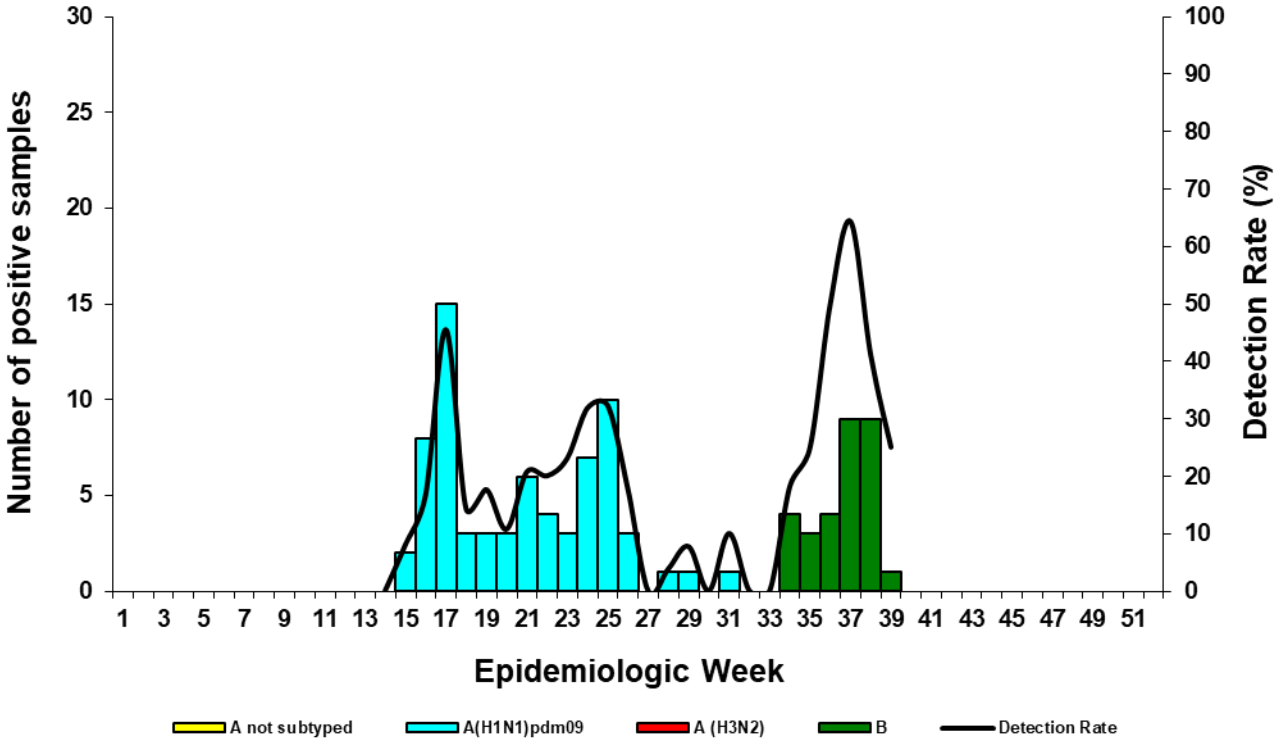
Reporting period 01/01/2018 to 30/09/2018 *Results until end of epidemiologic week 39(2018)*

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 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
Agincourt Clinic (MP)*		3			141
Edendale Gateway Clinic (KZ)		40		12	309
Jouberton Clinic (NW)		27		18	307
Total:		70		30	757

KZ: KwaZulu-Natal; NW: North West, MP: Mpumalanga *Surveillance suspended at Mpumalanga site since week 22

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Reporting period 01/01/2018 to 30/09/2018 *Results until end of epidemiologic week 39(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

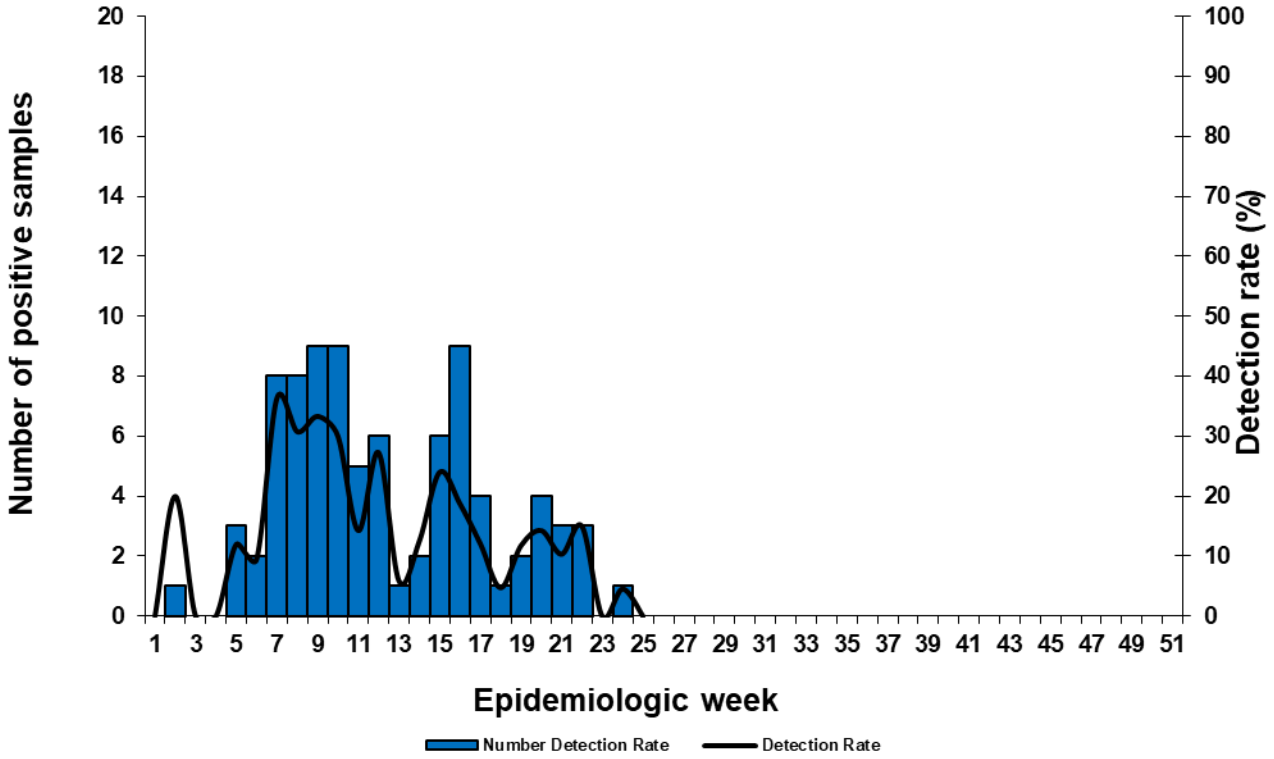

Table 2. Cumulative number of respiratory syncytial virus identified and total number of samples tested by clinic and province

Clinic (Province)	RSV Positive	Total samples
Agincourt Clinic (MP)*	38	141
Edendale Gateway Clinic (KZ)	27	309
Jouberton Clinic (NWP)	22	307
Total:	87	757

KZ: KwaZulu-Natal; NW: North West, MP: Mpumalanga *Surveillance suspended at Mpumalanga site since week 22

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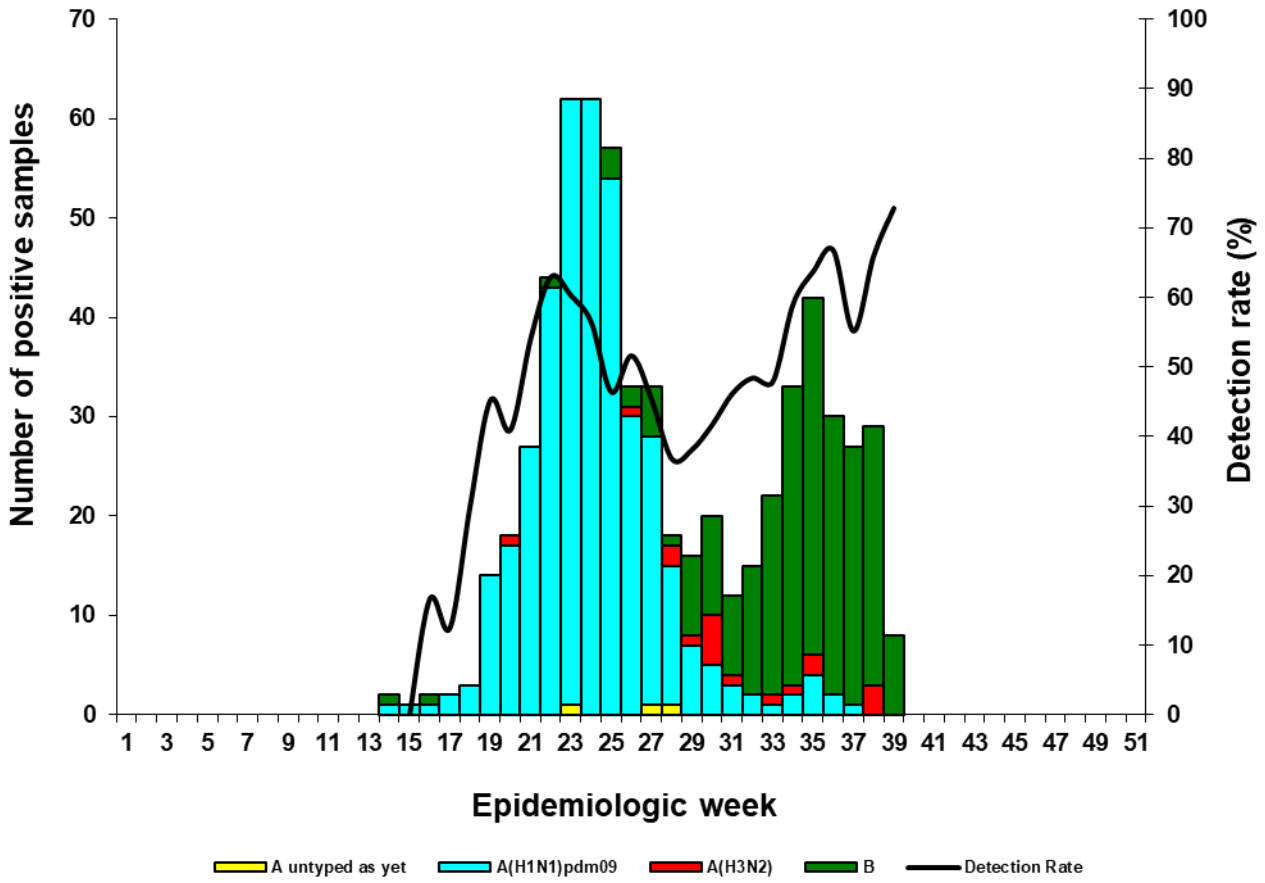
Reporting period 01/01/2018 to 30/09/2018 *Results until end of epidemiologic week 39(2018)*

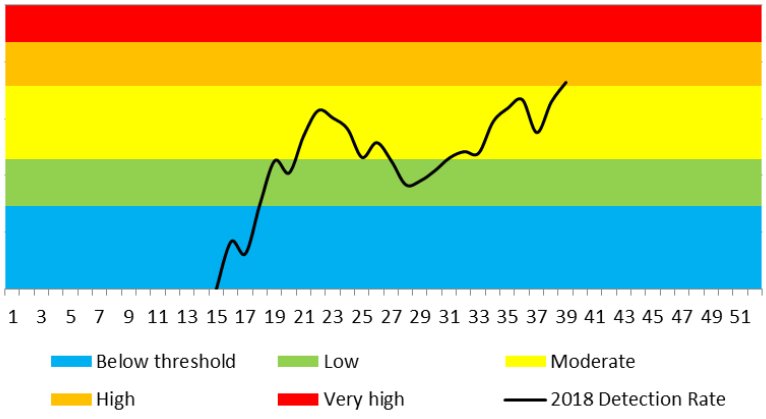
Influenza-like illness (ILI) surveillance Viral Watch

Figure 4. Number of positive samples* by influenza types and A not typed as yet 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 2007-2017 data (Excluding 2009)

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Reporting period 01/01/2018 to 30/09/2018 *Results until end of epidemiologic week 39(2018)*

Table 4. Cumulative number of influenza type and subtype and total number of samples tested by province

Province	A not typed as yet	A(H1N1)pdm09	A(H3N2)	B	Total samples
Eastern Cape	1	52		18	110
Free State				1	14
Gauteng	1	198	14	80	633
Limpopo		15		7	37
Mpumalanga	1	20		5	76
North West		1		2	5
Northern Cape		3		1	17
Western Cape		95	3	113	432
Total:	3	384	17	227	1324

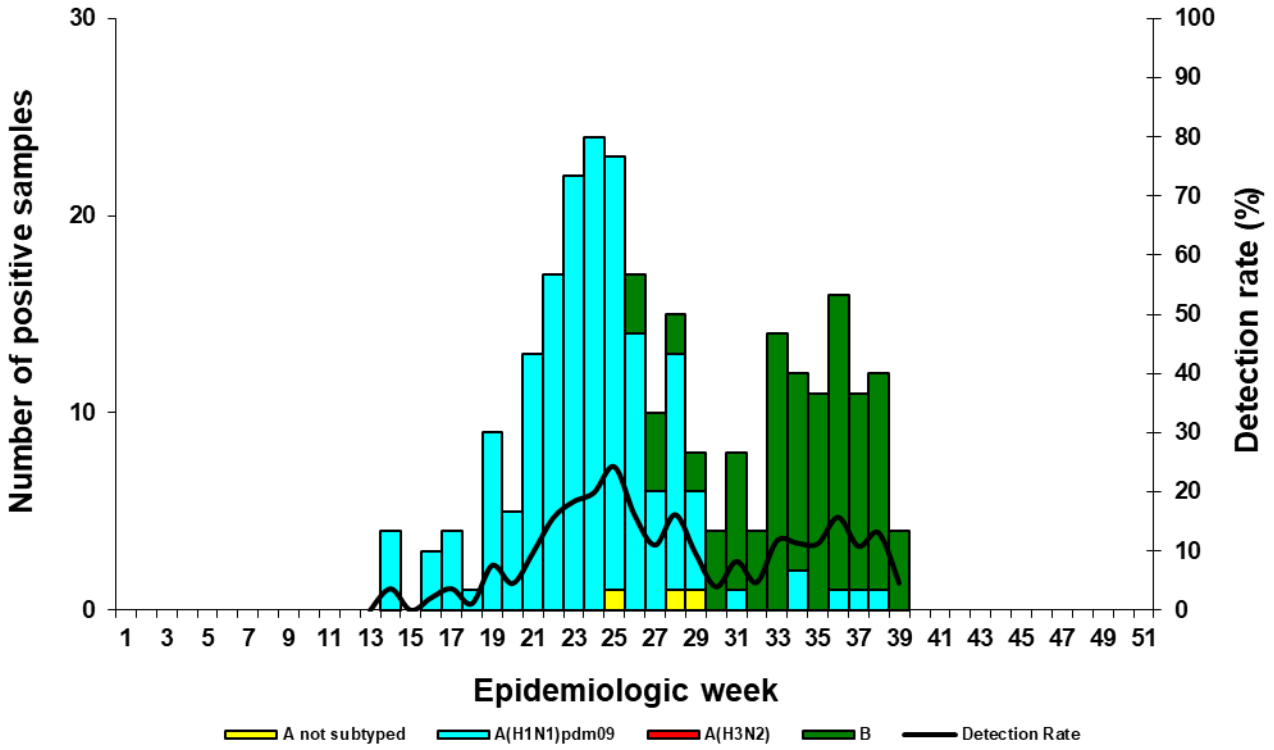
From 01 January 2018 to date, 111 patients were tested for influenza at the time of entry into South Africa following travel abroad and 32 tested influenza positive - 15 of which were identified as influenza A(H1N1)pdm09, 06 as influenza A(H3N2), 11 as influenza B.

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

Reporting period 01/01/2018 to 30/09/2018 *Results until end of epidemiologic week 39(2018)*

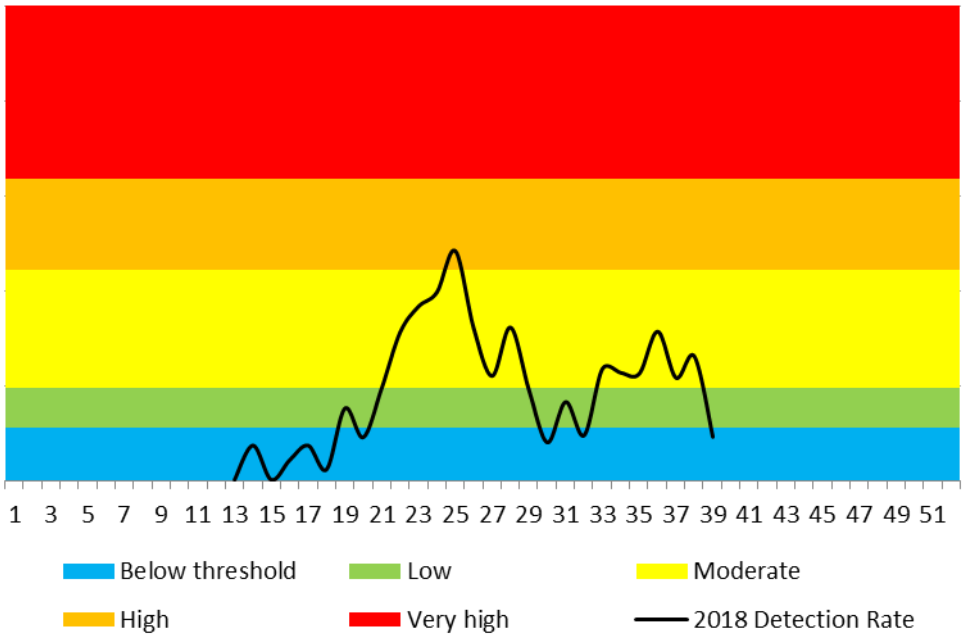
National syndromic surveillance for pneumonia

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

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Reporting period 01/01/2018 to 30/09/2018 *Results until end of epidemiologic week 39(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)	1	28		3	587
Helen Joseph-Rahima Moosa (GP)		40		25	846
Klerksdorp-Tshepong (NW)		13		14	579
Mapulaneng-Matikwana (MP)		25		5	238
Red Cross (WC)	2	37		33	1053
Mitchell's Plain (WC)		24		21	518
Total:	3	167		101	3821

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

In addition 95 specimens have been tested from pregnant women in Groote Schuur Hospital and Mowbray Maternity Hospital, two of whom were positive for Influenza A(H1N1)pdm09 and one positive for Influenza B.

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

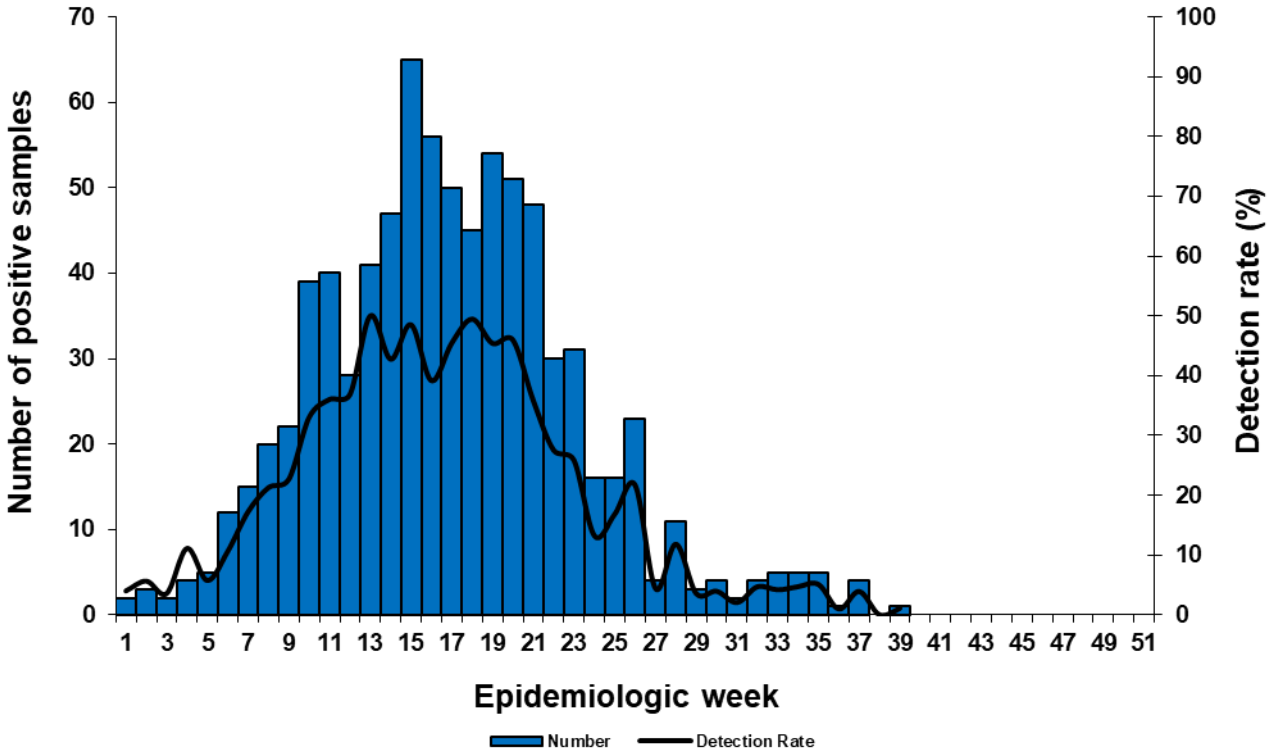


Table 6: Cumulative number of respiratory syncytial virus identified and total number of samples tested by hospital

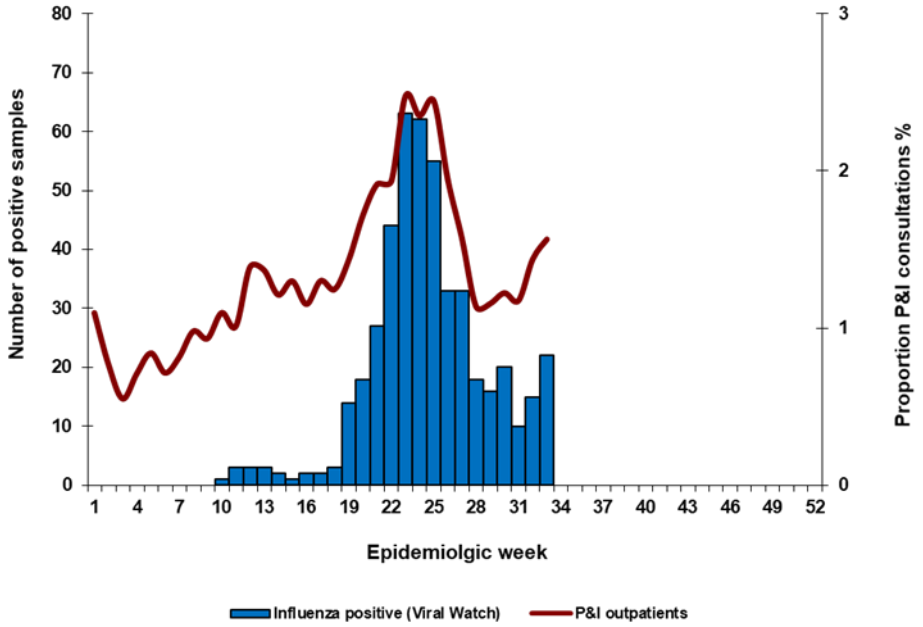
Hospital (Province)	RSV Positive	Total samples
Edendale (KZ)	79	587
Helen Joseph-Rahima Moosa (GP)	163	846
Klerksdorp-Tshepong (NW)	42	579
Mapulaneng-Matikwana (MP)	46	238
Red Cross (WC)	340	1053
Mitchel's Plain (WC)	144	518
Total:	814	3821

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

Reporting period 01/01/2018 to 19/08/2018 *Results until end of epidemiologic week 33 (2018)*

Private hospital consultations

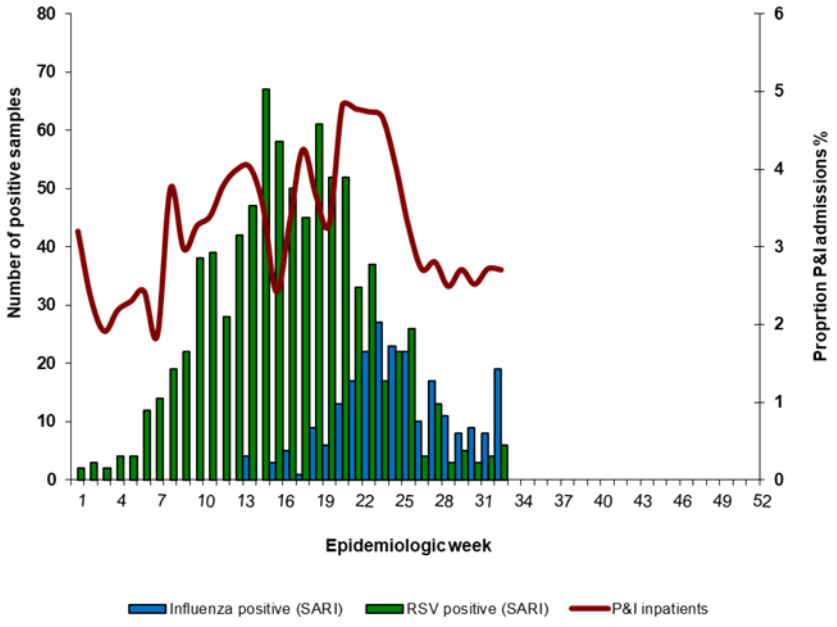
Figure 9. Number of private hospital outpatient consultations* with a diagnosis of pneumonia and influenza (P&I) and viral isolates**



* 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.

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