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Highlights – Week 17

- The 2020 influenza season has not yet started, with no influenza detections in the last week. Sustained detections of influenza A(H1N1)pdm09 and to a lesser extent influenza B(Victoria) were made from Western Cape Province, in all surveillance programmes from week 2 to week 15, but numbers have now reduced.
- The 2020 RSV season has not yet started, however, sporadic detections of RSV are being made. In the previous 3 years the average start of RSV season ranged between week 7 to week 9, therefore the start of the season in 2020 is substantially delayed compared to previous years, possibly in part due to the national lockdown.
- Testing for SARS-CoV-2 was initiated in all three surveillance programmes in week 10 (week starting 2 March 2020). One patient tested positive for SARS-CoV-2 in the viral watch programme in week 14. In the current reporting week, one patient has tested positive in the pneumonia surveillance programme and two in the influenza-like illness programming, possibly reflecting increasing circulation in the population covered by these programmes.

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 (symptom onset ≤ 10 days) or chronic (symptom onset > 10) 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 SARS-CoV-2****	INF RSV BP SARS-CoV-2****	INF RSV BP SARS-CoV-2****	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*

****SARS-CoV-2: Severe acute respiratory syndrome coronavirus 2

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Comments:

Notice

Since the start of the national lock down, we have seen a systematic decrease in the number of patients presenting to healthcare facilities and enrolled into our surveillance programmes. This includes patients presenting to public clinics, general practitioners and the number of patients admitted to hospital. A similar decrease in is seen in the private hospital consultation analysis.

Influenza

The 2020 influenza season has not yet started although sustained detections of influenza A(H1N1)pdm09 and to a lesser extent influenza B(Victoria) were made from Western Cape Province, in all surveillance programmes from week 2 to week 15, but numbers have now reduced. There has been no influenza circulating from all other provinces in 2020.

ILI programme: In 2020 to date, specimens from 469 patients were received from 4 ILI sites. Influenza was detected in 52 specimens (all from Western Cape province), 36 (69%) were identified as influenza A(H1N1)pdm09, one (2%) influenza A subtype inconclusive, 12 (23%) as influenza B (Victoria) and three (6%) B lineage inconclusive.

Viral Watch programme: During the same period, specimens were received from 198 patients from Viral Watch sites in 8 provinces. Influenza was detected in 77 patients (76 from Western Cape and one imported case from Gauteng provinces), of which 74 (97%) were influenza A(H1N1)pdm09, one (1%) influenza A(H3N2) and one (1%) influenza B(Victoria). Seven (9%; 7/77) of the positive cases had history of international travel.

Pneumonia surveillance: Since the beginning of 2020, specimens from 1005 patients with severe respiratory illness (SRI) were received from the 6 sentinel sites. Influenza was detected in 26 patients (all from Western Cape province), of which 21 (81%) were influenza A(H1N1)pdm09, one (4%) influenza A subtype inconclusive and four (15%) influenza B(Victoria).

Respiratory syncytial virus

The 2020 RSV season has not yet started. However, sporadic detections of RSV are being made. In the previous 3 years the average start of RSV season ranged between week 7 to week 9, therefore the start of the season is delayed compared to previous years in 2020.

ILI programme: In 2020 to date, 469 specimens were tested and RSV was detected in specimens of seven (1%) patients.

Viral Watch programme: During the same period, 198 specimens were tested and RSV was not detected.

Pneumonia surveillance: Since the beginning of 2020, 1005 specimens were tested and RSV was detected in specimens of 79 (8%) patients.

SARS-CoV-2 (Severe acute respiratory syndrome coronavirus 2)

Testing for SARS-CoV-2 was initiated in all three surveillance programmes in week 10 (week starting 2 March 2020).

ILI programme: In 2020 to date, specimens from 237 patients were tested and SARS-CoV-2 was detected in two (0.8%) patients at Mitchell's Plain Clinic.

Viral Watch programme: In 2020 to date, specimens were tested from 95 patients and SARS-CoV-2 was detected in one (1%) patient.

Pneumonia surveillance: In 2020 to date, specimens from 482 patients with severe respiratory illness (SRI) were tested and SARS-CoV-2 was detected in one (0.2%) patient, a child admitted to the Red Cross Children's Hospital.

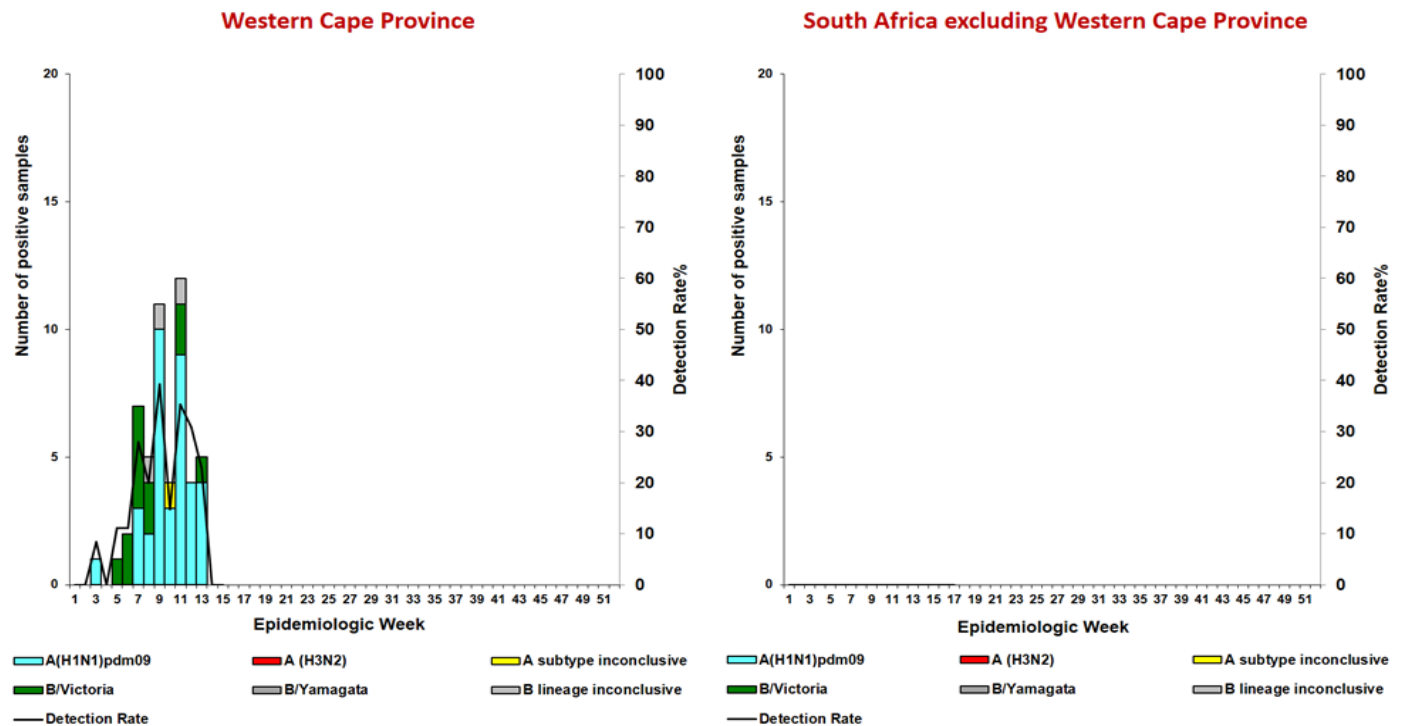
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Influenza-like illness (ILI) surveillance primary health care clinics

Figure 1. Number of positive samples* by influenza subtype and lineage and detection rate** by week



*Specimens from patients with influenza-like illnesses at 4 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

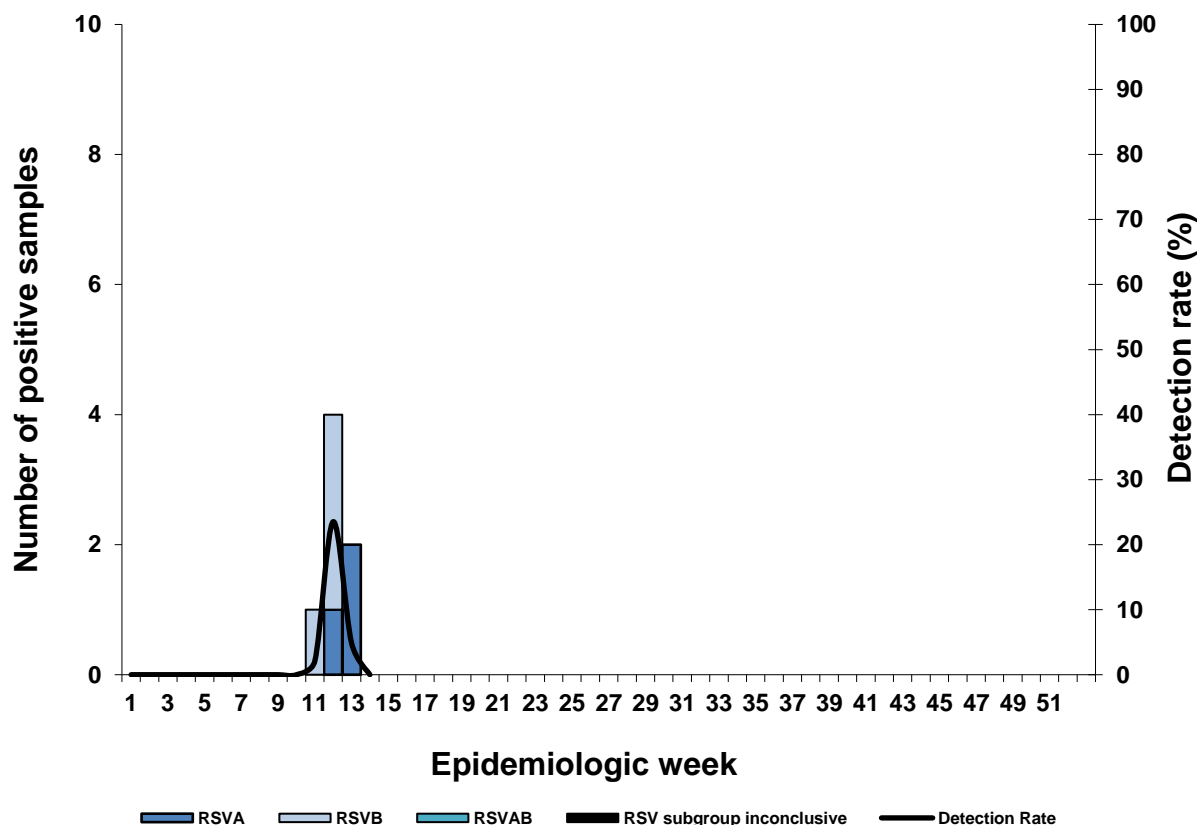
Clinic (Province)	A(H1N1)pdm09	A(H3N2)	A subtype inconclusive	B/Victoria	B/Yamagata	B lineage inconclusive	Total samples
Eastridge (WC)	33	0	1	12	0	3	214
Edendale Gateway (KZ)	0	0	0	0	0	0	81
Jouberton (NW)	0	0	0	0	0	0	100
Mitchell's Plain (WC)	3	0	0	0	0	0	74
Total:	36	0	1	12	0	3	469

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

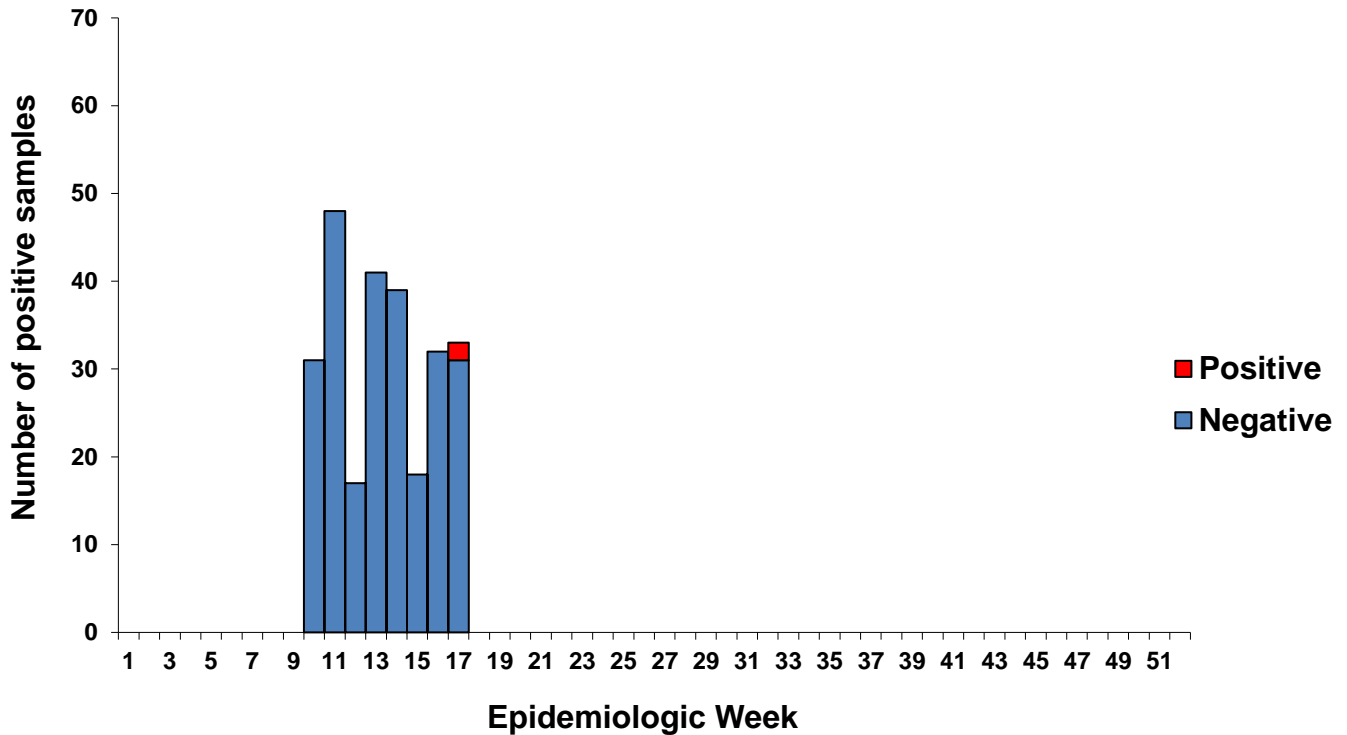
Table 2. Cumulative number of respiratory syncytial virus subgroups identified and total number of samples tested by clinic and province

Clinic (Province)	RSVA	RSVB	RSVAB	RSV subgroup inconclusive	Total samples
Eastridge (WC)	0	2	0	0	214
Edendale Gateway (KZ)	3	2	0	0	81
Jouberton (NW)	0	0	0	0	100
Mitchell's Plain (WC)	0	0	0	0	74
Total	3	4	0	0	469

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 1. Number of samples* tested, and results, for SARS-CoV-2 by week



*Specimens from patients with influenza-like illnesses at 4 sentinel sites in 3 provinces

Table 1. Cumulative number of SARS-CoV-2 identified and total number of samples tested by clinic and province

Clinic (Province)	SARS-CoV-2 positive	SARS-CoV-2 negative	Total samples tested
Eastridge (WC)	0	111	111
Edendale Gateway (KZ)	0	31	31
Jouberton (NW)	0	51	51
Mitchell's Plain (WC)	2	42	44
Total:	2	235	237

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

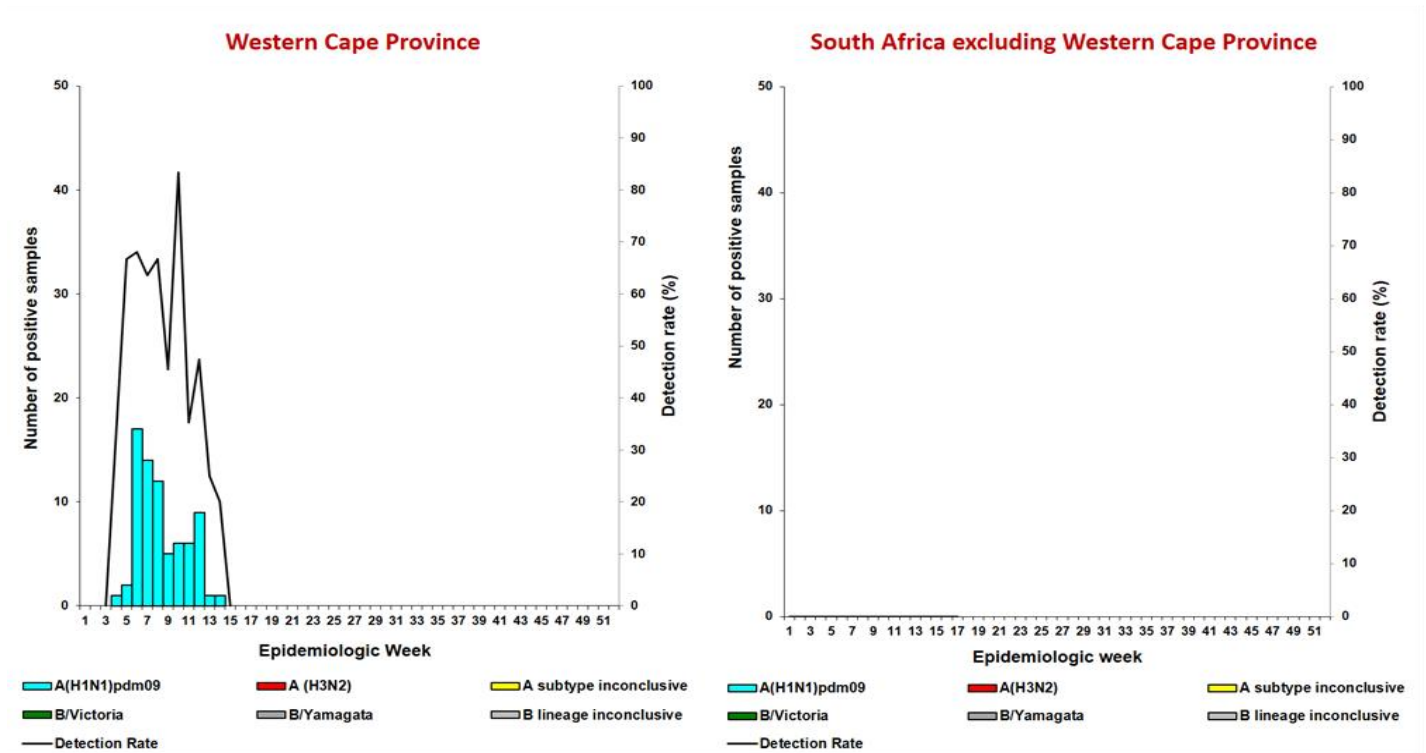
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Influenza-like illness (ILI) surveillance Viral Watch

Figure 4. Number of positive samples* by influenza subtype and lineage and detection rate** by week

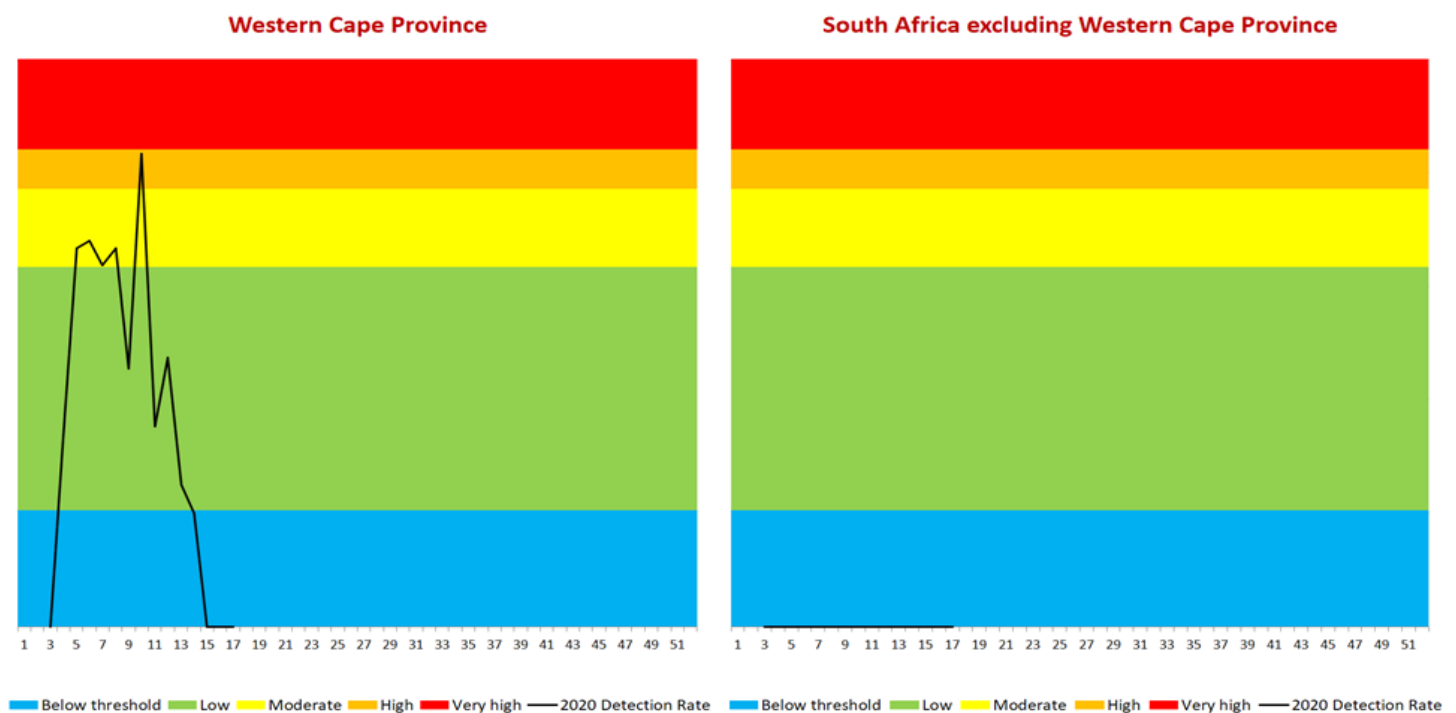


*Specimens from patients with Influenza-like illnesses at 92 sentinel sites in 8 provinces

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

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

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



*Thresholds based on 2010-2019 data

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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	0	0	0	0	0	0	4
Free State	0	0	0	0	0	0	0
Gauteng	1	0	0	0	0	0	46
Limpopo	0	0	0	0	0	0	1
Mpumalanga	0	0	0	0	0	0	2
North West	0	0	0	0	0	0	0
Northern Cape	0	0	0	0	0	0	4
Western Cape	74	1	0	1	0	0	141
Total:	75	1	0	1	0	0	198

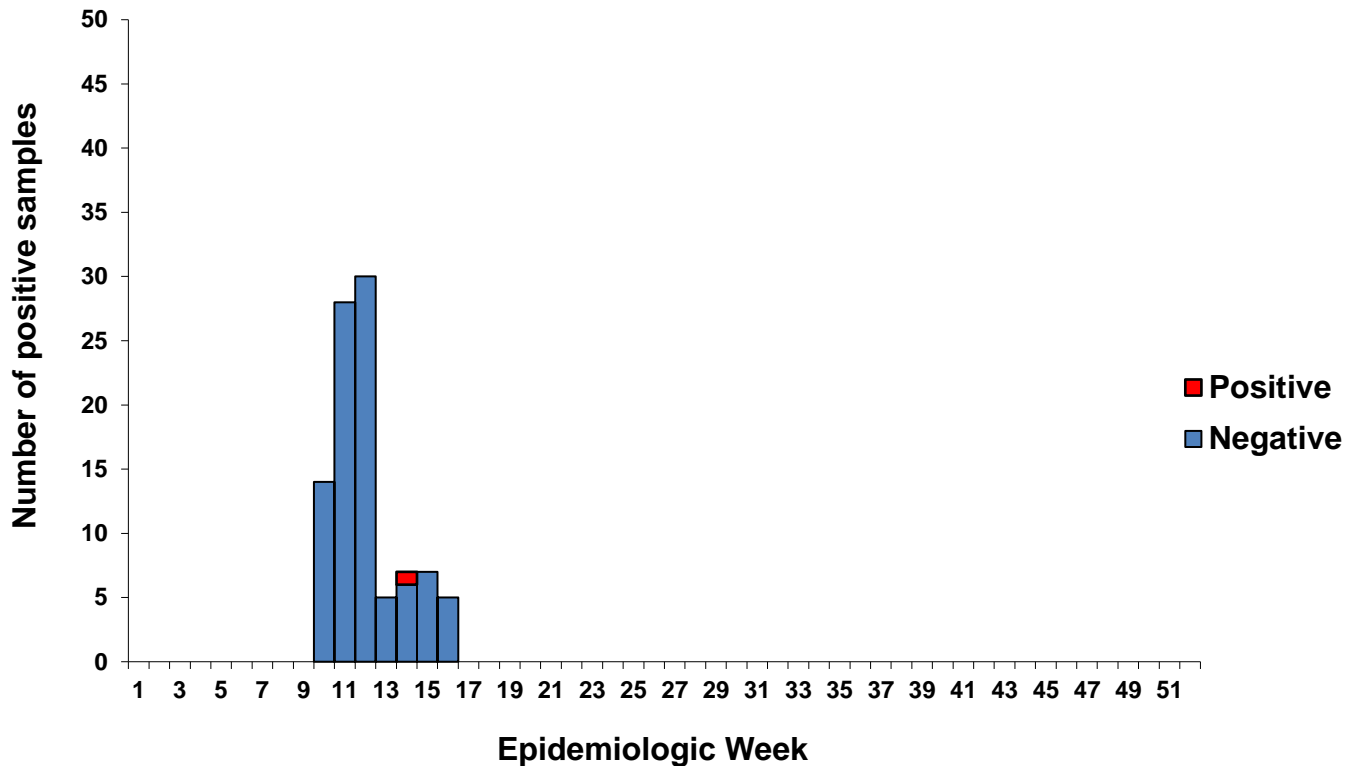
Inconclusive: insufficient viral load in sample and unable to characterise further

From 01 January 2020 to date, 10 patients were tested for influenza at the time of entry into South Africa following travel abroad and influenza was detected in three patients, of which one influenza A(H1N1)pdm09 and two influenza A(H3N2).

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

Influenza-like illness (ILI) surveillance: Viral Watch

Figure 2. Number of samples* tested, and results, for SARS-CoV-2 by week



*Specimens from patients with Influenza-like illnesses at 92 sentinel sites in 8 provinces

Table 2. Cumulative number of SARS-CoV-2 identified and total number of samples tested by province

Province	SARS-CoV-2 positive	SARS-CoV-2 negative	Total samples tested
Eastern Cape	0	3	3
Free State	0	0	0
Gauteng	0	35	35
Limpopo	0	0	0
Mpumalanga	0	0	0
North West	0	0	0
Northern Cape	0	2	2
Western Cape	1	54	55
Total:	1	94	95

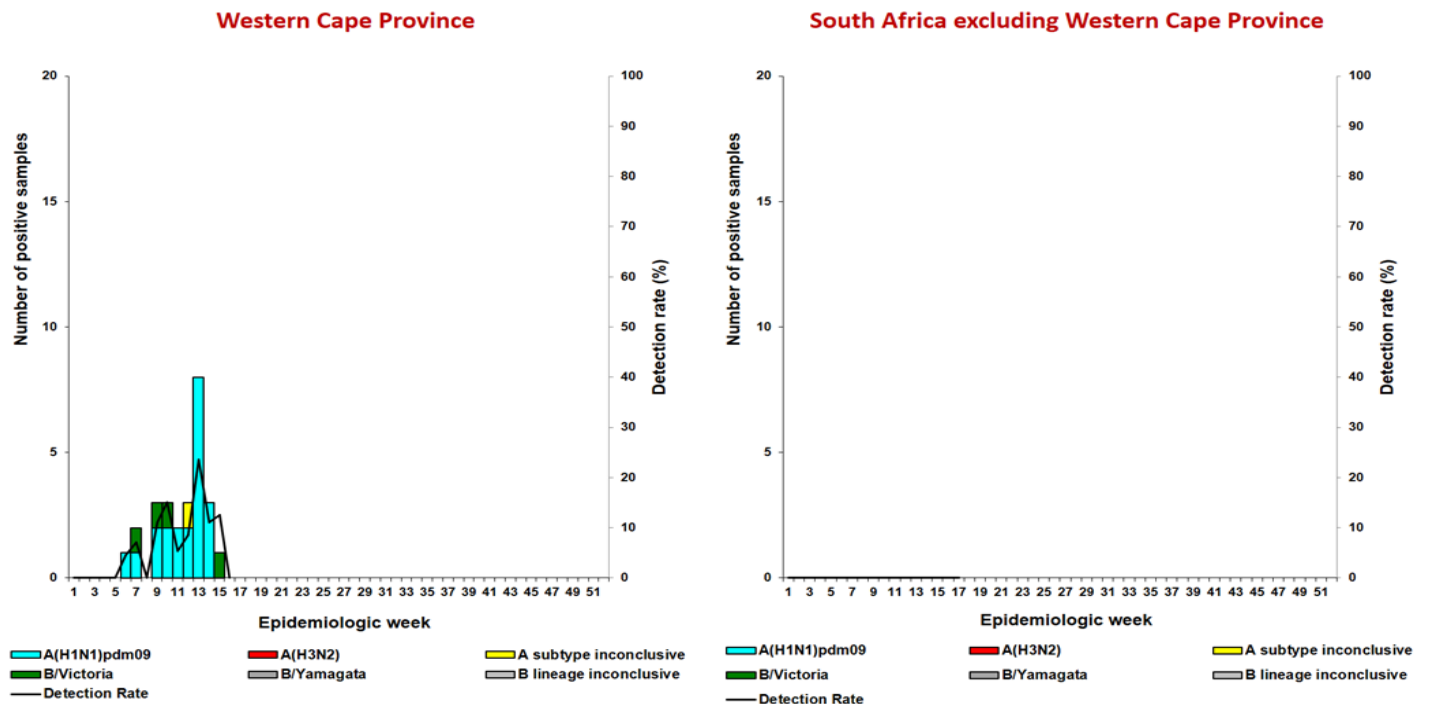
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National syndromic surveillance for pneumonia

Figure 6. Number of positive samples* by influenza subtype and lineage and detection rate** by week

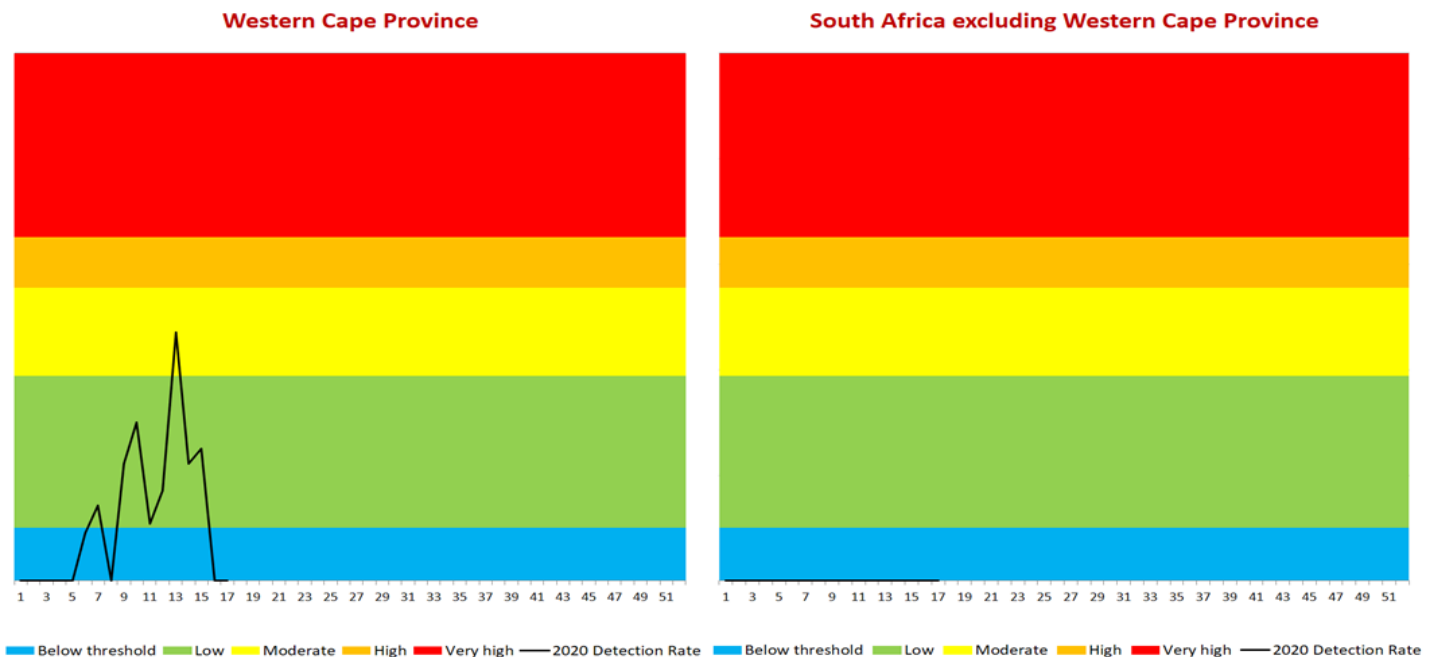


*Specimens from patients hospitalised with pneumonia at 6 sentinel sites in 5 provinces

**Only reported for weeks with >10 specimens submitted

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

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



*Thresholds based on 2010-2019 data

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Table 5. Cumulative number of identified influenza subtype and lineage and total number of samples tested by hospital

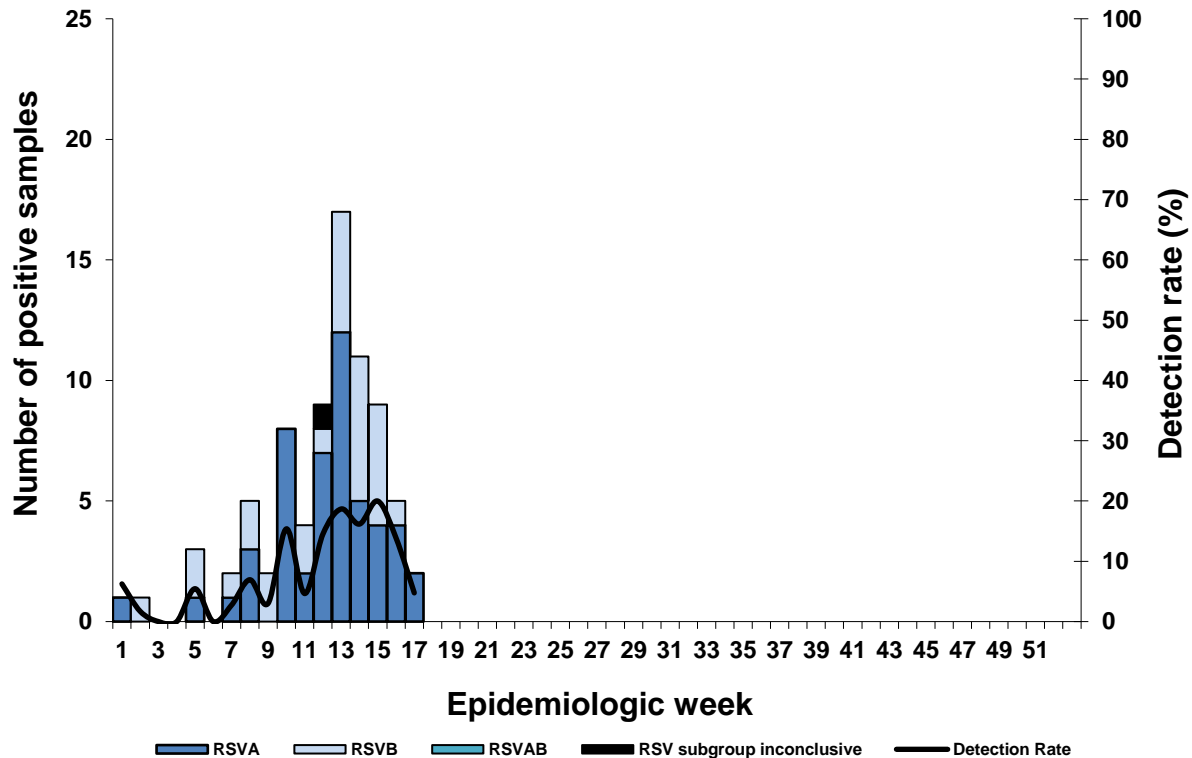
Hospital (Province)	A subtype		A subtype inconclusive	B lineage		Total samples
	A(H1N1)pdm09	A(H3N2)		B/Victoria	B/Yamagata	
Edendale (KZ)	0	0	0	0	0	148
Helen Joseph-Rahima Moosa (GP)	0	0	0	0	0	237
Klerksdorp-Tshepong (NW)	0	0	0	0	0	134
Mapulaneng-Matikwana (MP)	0	0	0	0	0	100
Red Cross (WC)	19	0	0	2	0	281
Mitchell's Plain (WC)	2	0	1	2	0	105
Total:	21	0	1	4	0	1005

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

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

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

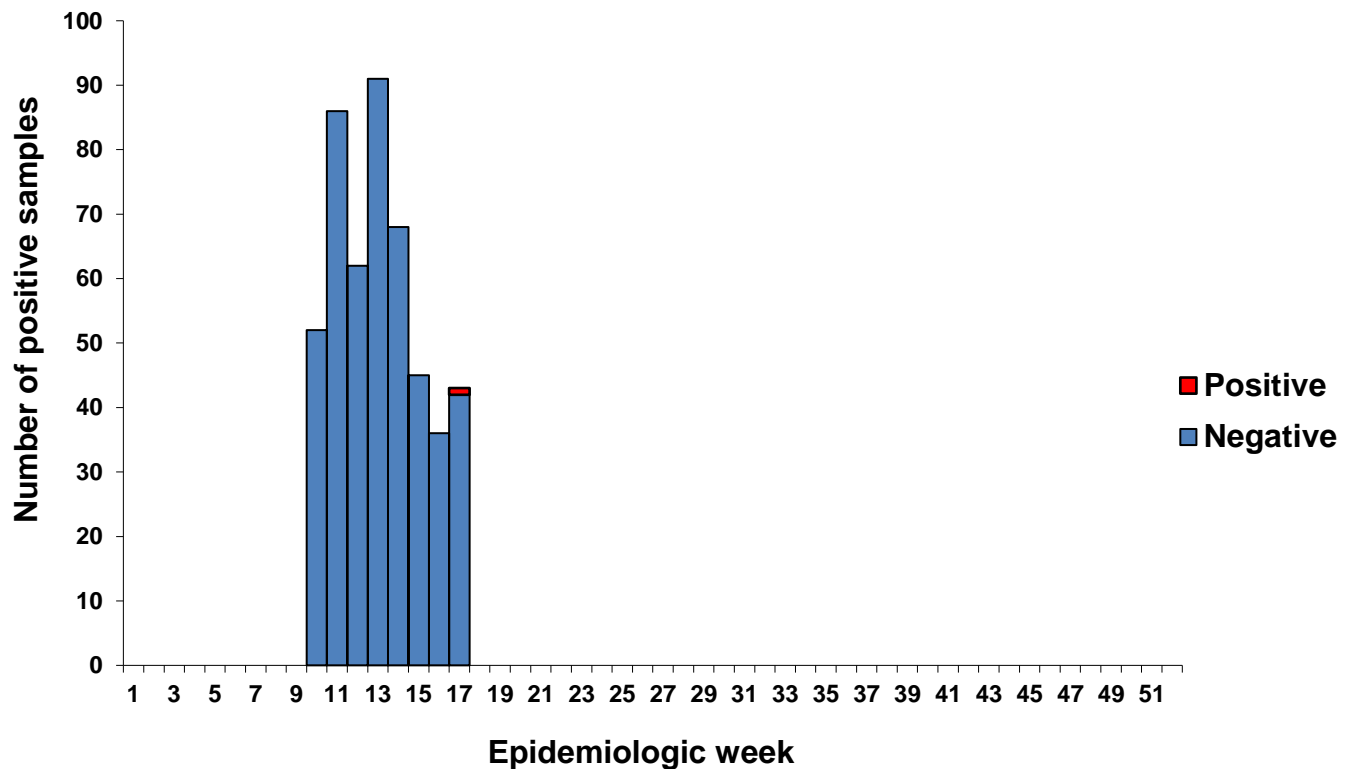
Table 6: Cumulative number of respiratory syncytial virus subgroups identified and total number of samples tested by hospital

Hospital (Province)	RSVA	RSVB	RSVAB	RSV subgroup inconclusive	Total samples
Edendale (KZ)	1	7	0	1	148
Helen Joseph-Rahima Moosa (GP)	29	7	0	0	237
Klerksdorp-Tshepong (NW)	1	0	0	0	134
Mapulaneng-Matikwana (MP)	0	0	0	0	100
Red Cross (WC)	18	14	0	0	281
Mitchell's Plain (WC)	1	0	0	0	105
Total:	50	28	0	1	1005

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

National syndromic surveillance for pneumonia

Figure 3. Number of samples* tested, and results, for SARS-CoV-2 by week



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

Table 3. Cumulative number of identified SARS-CoV-2 and total number of samples tested by hospital

Hospital (Province)	SARS-CoV-2 positive	SARS-CoV-2 negative	Total samples tested
Edendale (KZ)	0	73	73
Helen Joseph-Rahima Moosa (GP)	0	102	102
Klerksdorp-Tshepong (NW)	0	59	59
Mapulaneng-Matikwana (MP)	0	51	51
Red Cross (WC)	1	138	139
Mitchell's Plain (WC)	0	58	58
Total:	1	481	482

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