

# WEEKLY RESPIRATORY PATHOGENS SURVEILLANCE REPORT

SOUTH AFRICA WEEK 30 2020

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## CUMULATIVE DATA FROM



## HIGHLIGHTS: WEEK 30

The 2020 influenza season has not yet started. Only one detection of influenza A(H1N1)pdm09 has been made in week 24 (week starting 8 June 2020), since the localised outbreak of influenza A(H1N1)pdm09 and to a lesser extent influenza B(Victoria) in the Western Cape Province, in the first three months of the year.

Although the 2020 RSV season has not started, with only sporadic detections since mid April, there has been a moderate increase in detection over the past few weeks in both ILI and pneumonia surveillance programmes.

Testing for SARS-CoV-2 was initiated in all three surveillance programmes in week 10 (week starting 2 March 2020). In the current reporting week the proportion of SARS-CoV-2 positive results have again increased with 8/20 (40%) and 43/94 (46%) being positive in ILI and pneumonia surveillance programmes respectively.

# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

WEEK 30 2020 | REPORTING PERIOD 01 JANUARY 2020 TO 26 JULY 2020

## PROGRAMME DESCRIPTIONS

Programme	Influenza-like illness (ILI)	Viral Watch	National syndromic surveillance for pneumonia
<b>Start year</b>	2012	1984	2009
<b>Provinces*</b>	KZ NW WC**	EC FS GP LP MP NC NW WC	GP KZ MP NW WC
<b>Type of site</b>	Primary health care clinics	General practitioners	Public hospitals
<b>Case definition</b>	An acute respiratory illness with a temperature ( $\geq 38^{\circ}\text{C}$ ) and cough, & onset $\leq 10$ days	An acute respiratory illness with a temperature ( $\geq 38^{\circ}\text{C}$ ) and cough, & onset $\leq 10$ days	Acute (symptom onset $\leq 10$ days) or chronic (symptom onset $> 10$ ) lower respiratory tract infection
<b>Specimens collected</b>	Oropharyngeal & nasopharyngeal swabs	Throat and/or nasal swabs or Nasopharyngeal swabs	Oropharyngeal & nasopharyngeal swabs
<b>Main pathogens tested***</b>	INF RSV BP SARS-CoV-2****	INF RSV BP SARS-CoV-2****	INF RSV BP SARS-CoV-2****

### 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

# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

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## COMMENTS

### 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. In week 24 (week ending 14th June), one influenza case has been detected in Gauteng province.

**ILI programme:** In 2020 to date, specimens from 797 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 (Figure1 and Table1).

**Viral Watch programme:** During the same period, specimens were received from 282 patients from Viral Watch sites in eight provinces. Influenza was detected in 79 patients, five of which were acquired abroad. Of the 74 locally acquired infections, all were identified as influenza A(H1N1)pdm09. (Figure4 and Table4).

**Pneumonia surveillance:** Since the beginning of 2020, specimens from 2050 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) (Figure7 and Table 6).

### Respiratory syncytial virus

Although the 2020 RSV season has not started, with only sporadic detections since mid April, there has been a moderate increase in detection over the past few weeks in both ILI and pneumonia surveillance programmes.

**ILI programme:** In 2020 to date, 797 specimens were tested and RSV was detected in specimens of 12 (1.5%) patients.

**Viral Watch programme:** During the same period, 282 specimens were tested and RSV has not been detected.

**Pneumonia surveillance:** Since the beginning of 2020, 2 050 specimens were tested and RSV was detected in specimens of 145 (7%) 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 564 patients were tested and SARS-CoV-2 was detected in 67 (12%) patients.

**Viral Watch programme:** In 2020 to date, specimens were tested from 179 patients and SARS-CoV-2 was detected in 20 (11%) patients.

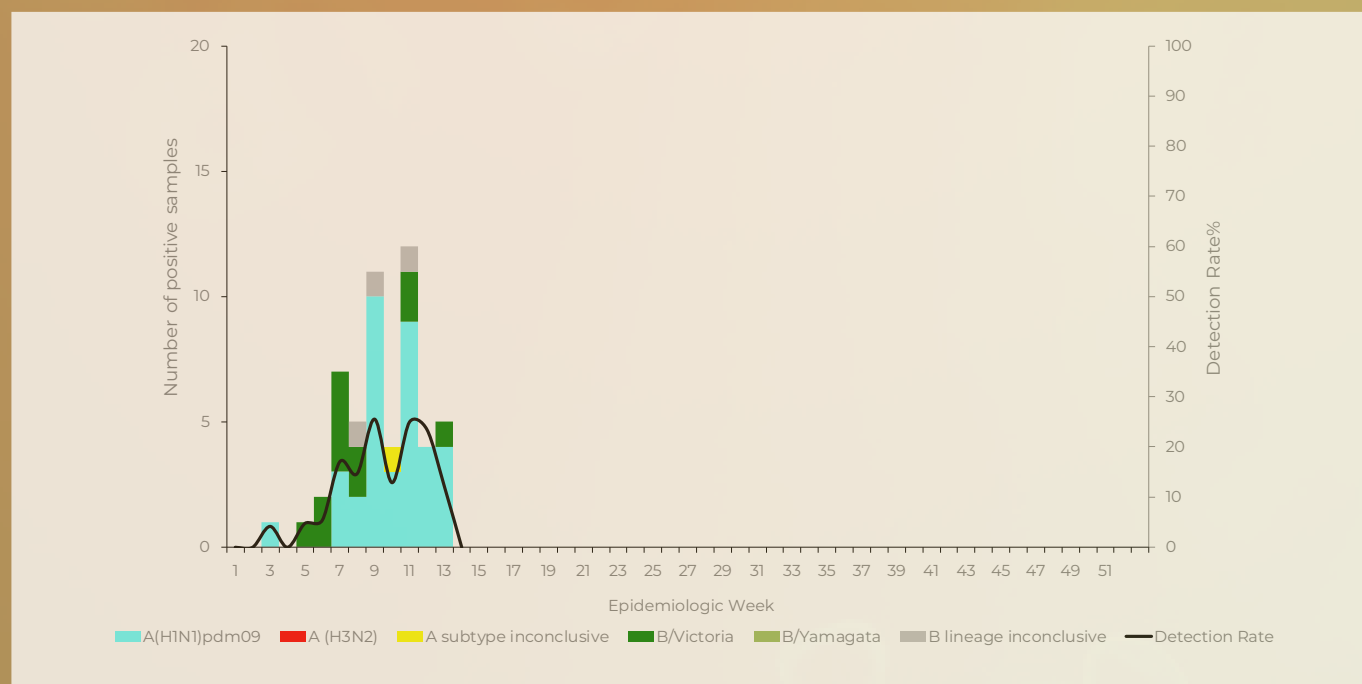
**Pneumonia surveillance:** In 2020 to date, specimens from 1 589 patients with severe respiratory illness (SRI) were tested and SARS-CoV-2 was detected in 248 (16%) patients.

# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

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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	362
Edendale Gateway (KZ)	0	0	0	0	0	0	106
Jouberton (NW)	0	0	0	0	0	0	137
Mitchell's Plain (WC)	3	0	0	0	0	0	192
<b>Total:</b>	<b>36</b>	<b>0</b>	<b>1</b>	<b>12</b>	<b>0</b>	<b>3</b>	<b>797</b>

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

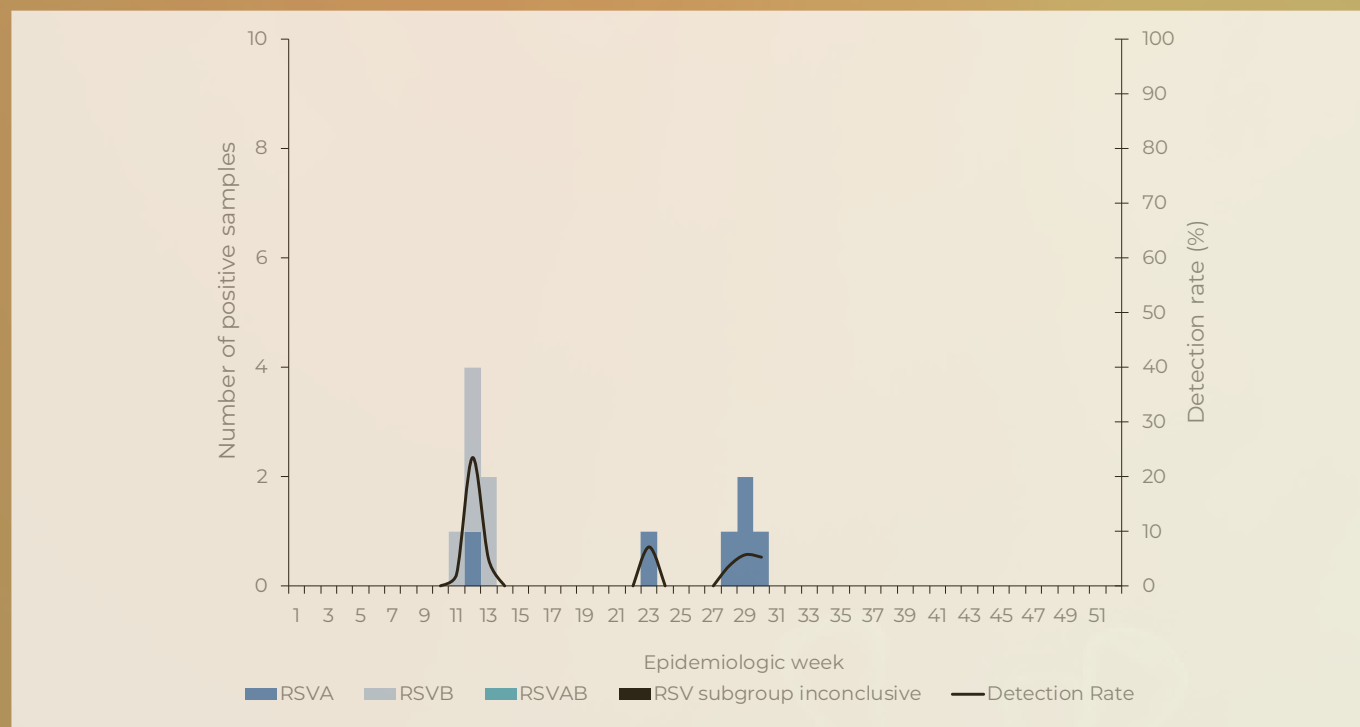
Inconclusive: insufficient viral load in sample and unable to characterise further

# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

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## 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)	4	2	0	0	362
Edendale Gateway (KZ)	1	4	0	0	106
Jouberton (NW)	0	0	0	0	137
Mitchell's Plain (WC)	1	0	0	0	192
<b>Total:</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>797</b>

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

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

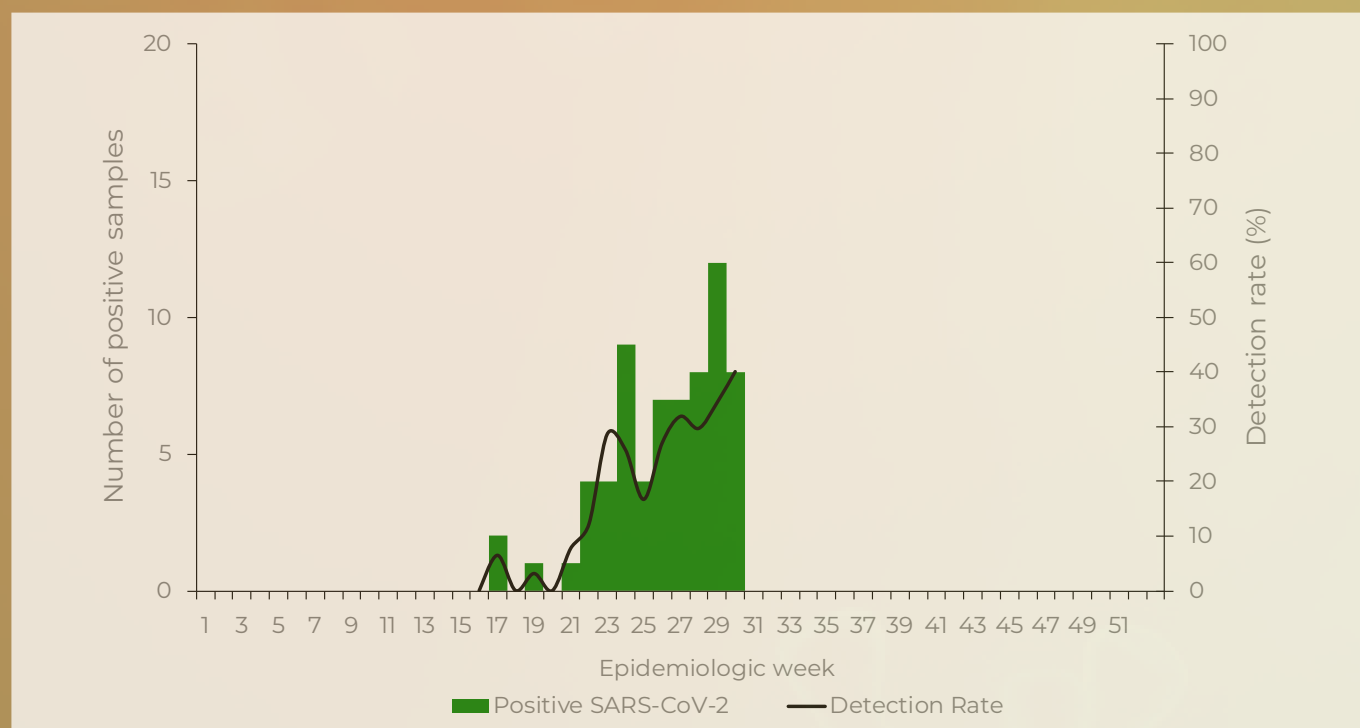
RSV AB: Both RSV A and B subgroup identified

# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

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## INFLUENZA-LIKE ILLNESS (ILI) SURVEILLANCE PRIMARY HEALTH CARE CLINICS

Figure 3. Number of samples testing positive for SARS-CoV-2\*, and detection rate by week



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

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

Clinic (Province)	SARS-CoV-2 Positive**	Total samples tested
Eastridge (WC)	23	259
Edendale Gateway (KZ)	12	56
Jouberton (NW)	5	89
Mitchell's Plain (WC)	27	160
<b>Total:</b>	<b>67</b>	<b>564</b>

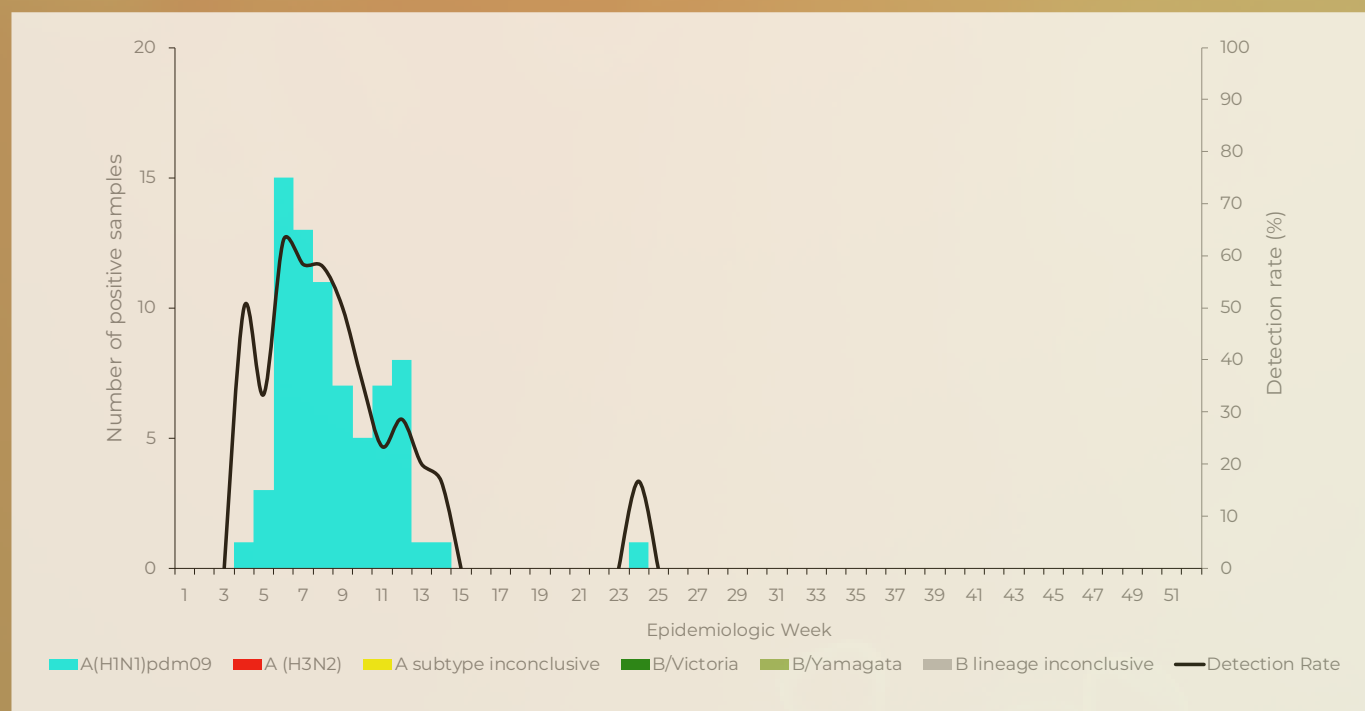
KZ: KwaZulu-Natal; NW: North West; WC: Western Cape

# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

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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

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

Clinic (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	11
Gauteng	1	0	0	0	0	0	98
Limpopo	0	0	0	0	0	0	3
Mpumalanga	0	0	0	0	0	0	2
North West	0	0	0	0	0	0	
Northern Cape	0	0	0	0	0	0	4
Western Cape	75	0	0	0	0	0	154
<b>Total:</b>	<b>76</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>276</b>

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).

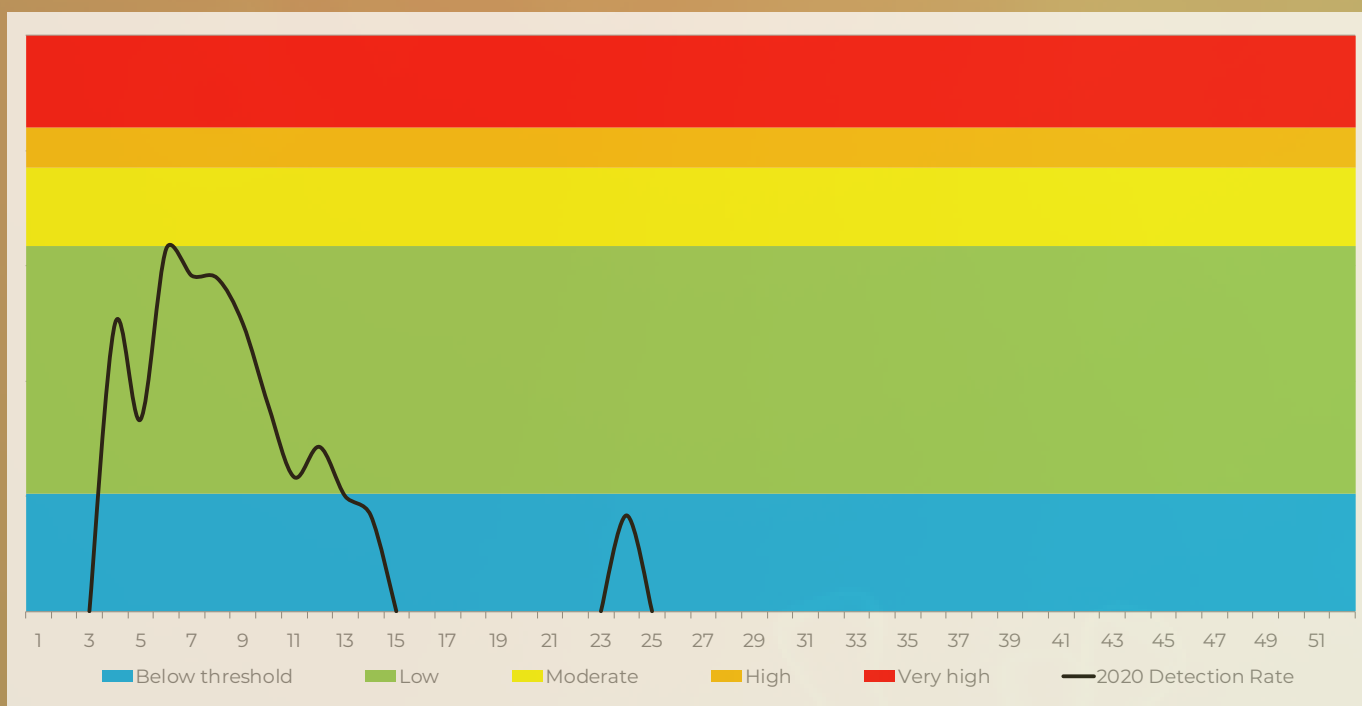
Patients known to have acquired influenza abroad are not included in the table or epidemiological curve.

# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

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## INFLUENZA-LIKE ILLNESS (ILI) SURVEILLANCE VIRAL WATCH

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



\*Thresholds based on 2010-2019 data

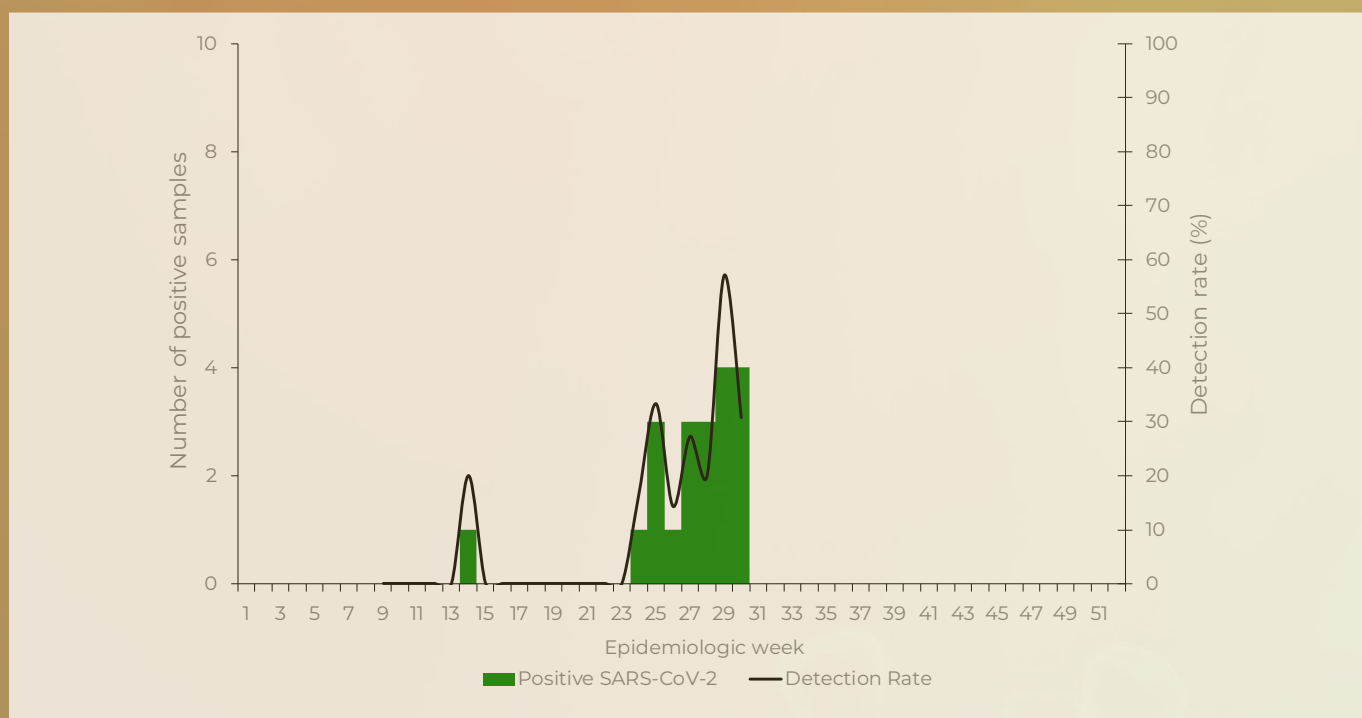


# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

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## INFLUENZA-LIKE ILLNESS (ILI) SURVEILLANCE: VIRAL WATCH

Figure 6. Number of samples testing positive for SARS-CoV-2\*, and detection rate by week



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

Table 5. Cumulative number of SARS-CoV-2 identified and total number of samples tested by province

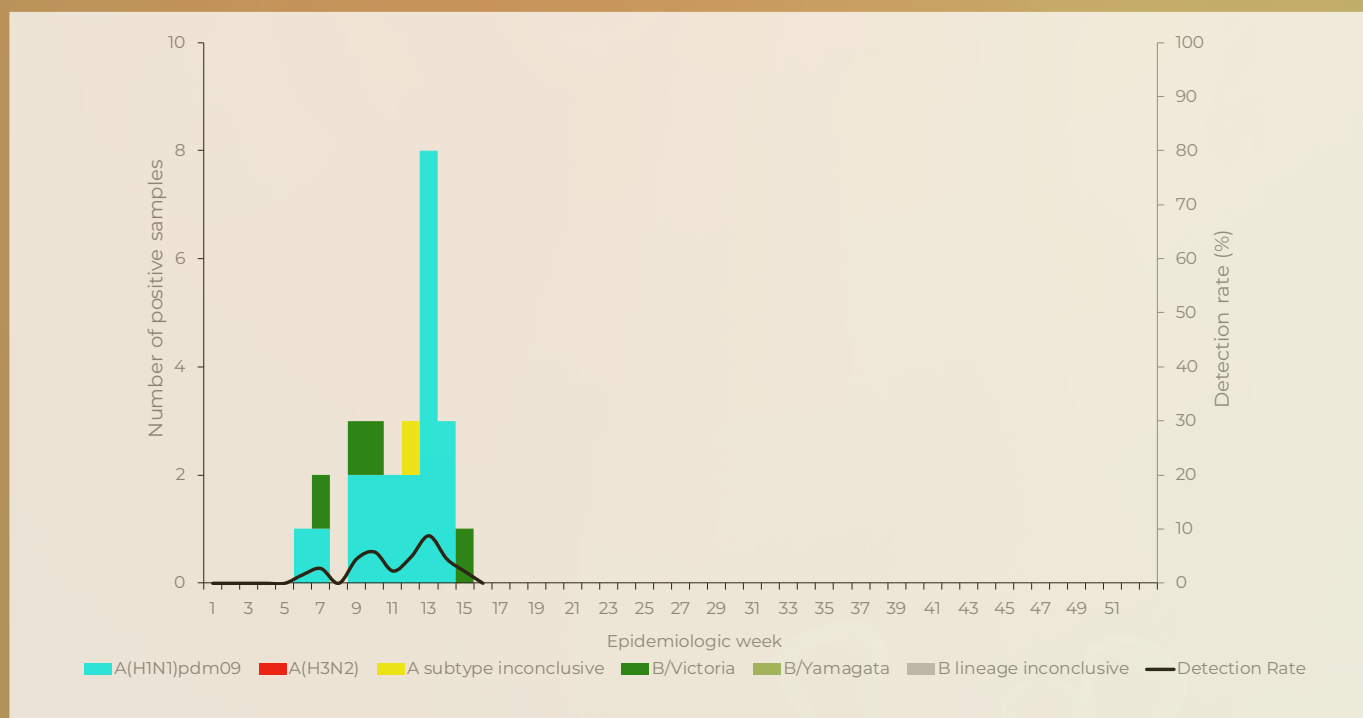
Province	SARS-CoV-2 positive	Total samples tested
Eastern Cape	0	4
Free State	0	11
Gauteng	16	94
Limpopo	0	2
Mpumalanga	0	0
North West	0	0
Northern Cape	0	2
Western Cape	4	66
<b>Total:</b>	<b>20</b>	<b>179</b>

# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

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## NATIONAL SYNDROMIC SURVEILLANCE FOR PNEUMONIA

Figure 7. 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 6. 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)	0	0	0	0	0	0	308
Helen Joseph-Rahima Moosa (GP)	0	0	0	0	0	0	518
Klerksdorp-Tshepong (NW)	0	0	0	0	0	0	333
Mpumalanga - Matikwana (MP)	0	0	0	0	0	0	148
Mitchell's Plain (WC)	19	0	0	2	0	0	224
Red Cross (WC)	2	0	1	2	0	0	519
<b>Total:</b>	<b>21</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>2 050</b>

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

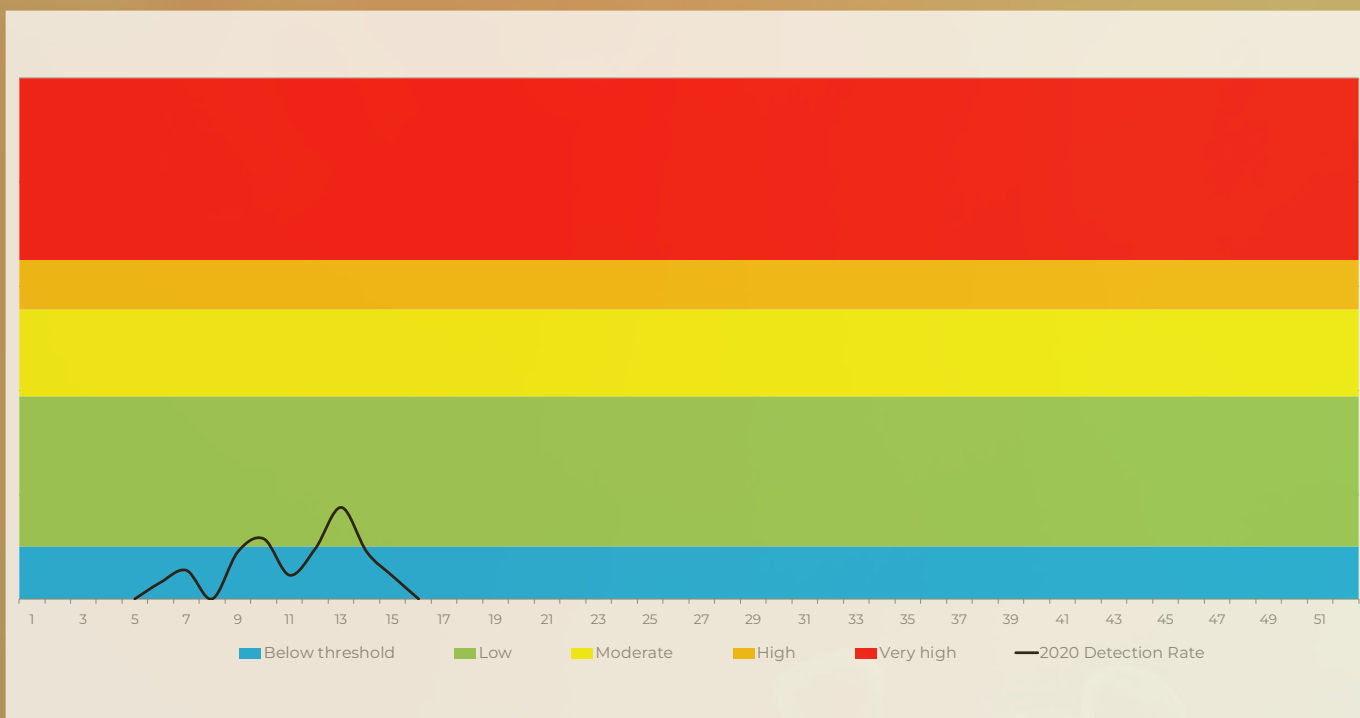
Inconclusive: insufficient viral load in sample and unable to characterise further

# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

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## NATIONAL SYNDROMIC SURVEILLANCE FOR PNEUMONIA

Figure 8. National syndromic surveillance for pneumonia percentage influenza detections and epidemic thresholds\*



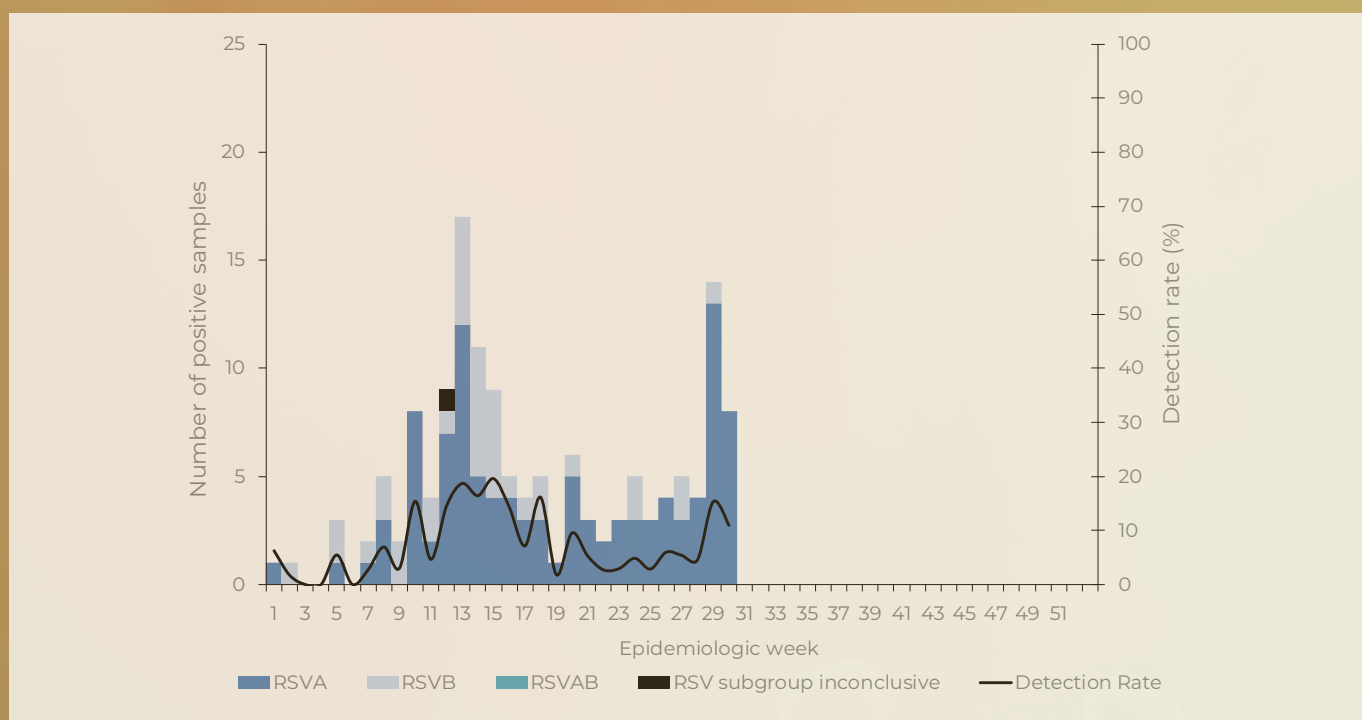
\*Thresholds based on 2010-2019 data

# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

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## NATIONAL SYNDROMIC SURVEILLANCE FOR PNEUMONIA

Figure 9. 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 7. Cumulative number of respiratory syncytial virus subgroups identified and total number of samples tested by hospital

Clinic (Province)	RSVA	RSVB	RSVAB	RSV subgroup inconclusive	Total samples
Edendale Gateway (KZ)	2	9	0	1	308
Helen Joseph Rahima Moosa (GP)	35	10	0	0	518
Klerksdorp (NW)	1	0	0	0	333
Mapulaneng-Matikwana (MP)	0	0	0	0	148
Red Cross (WC)	4	0	0	0	224
Mitchell's Plain (WC)	65	18	0	0	519
<b>Total:</b>	<b>107</b>	<b>37</b>	<b>0</b>	<b>1</b>	<b>2 050</b>

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

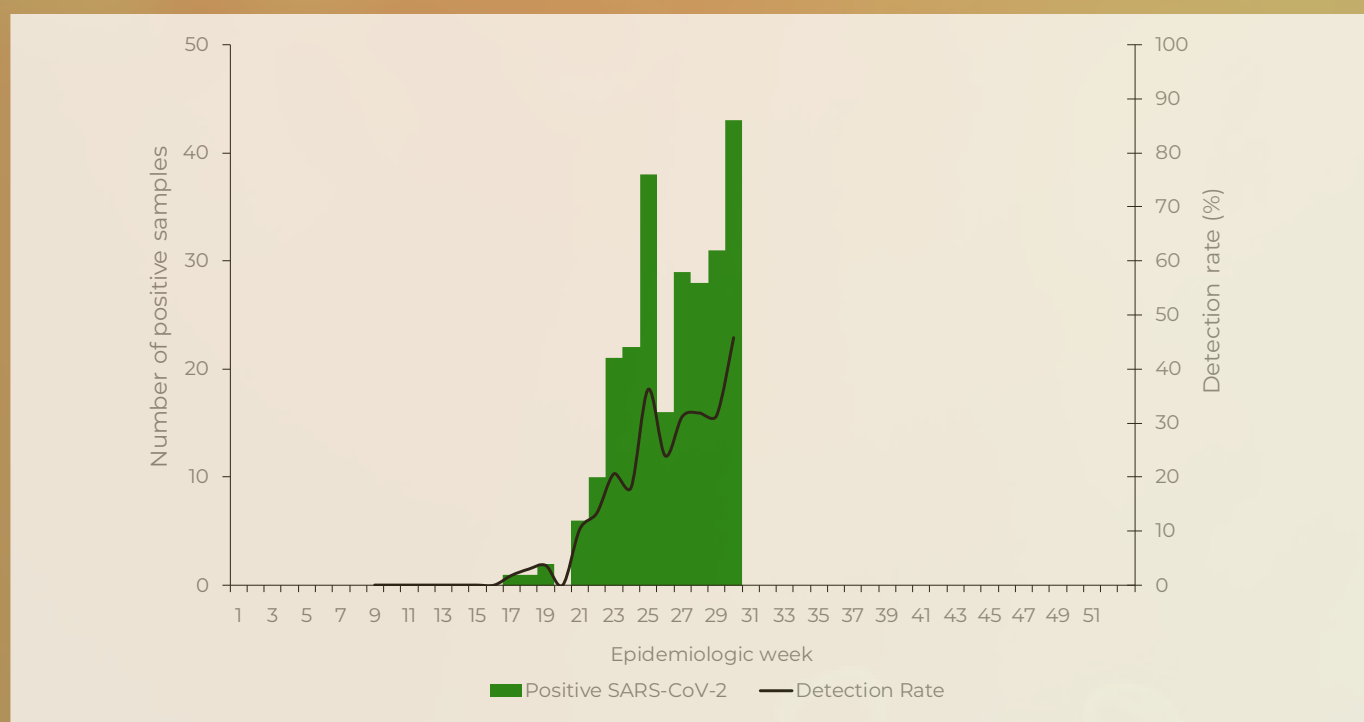
Inconclusive: insufficient viral load in sample and unable to characterise further  
 RSV AB: Both RSV A and B subgroup identified

# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

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## NATIONAL SYNDROMIC SURVEILLANCE FOR PNEUMONIA

Figure 10. Number of samples testing positive for SARS-CoV-2\*, and detection rate by week



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

Table 8. Cumulative number of identified SARS-CoV-2 and total number of samples tested by hospital

Hospital (Province)	SARS-CoV-2 positive	Total samples tested
Edendale (KZ)	32	239
Helen Joseph-Rahima Moosa (GP)	95	399
Klerksdorp-Tshepong (NW)	66	268
Mapulaneng-Matikwana (MP)	3	100
Red Cross (WC)	37	184
Mitchell's Plain (WC)	15	399
<b>Total:</b>	<b>248</b>	<b>1 589</b>

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

# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

WEEK 30 2020 | REPORTING PERIOD 02 MARCH 2020 TO 26 JULY 2020

## SUMMARY OF LABORATORY-CONFIRMED SARS-CoV-2 CASES

Table 9. Characteristics of laboratory-confirmed cases of COVID-19, enrolled in influenza-like illness (ILI) and pneumonia surveillance programmes, South Africa, 2 March 2020- 22 July 2020

Characteristic	Influenza -like illness (ILI), public sector, n =67 (%)	Pneumonia surveillance, n=248 (%)
<b>Age group</b>		
0-9	15/67 (22)	20/248 (8)
10-19	8/67 (12)	3/248 (1)
20-29	21/67 (31)	19/248 (8)
30-39	12/67 (18)	43/248 (17)
40-49	7/67 (10)	39/248 (16)
50-59	3/67 (4)	62/248 (25)
60-69	1/67 (1)	42/248 (17)
70-79	0/67 (0)	18/248 (7)
≥80	0/67 (0)	2/248 (1)
<b>Sex-female</b>	37/67 (55)	153/248 (62)
<b>Province*</b>		
Gauteng	N/A	95/248 (38)
KZN	12/67 (18)	32/248 (13)
Mpumalanga	N/A	3/248 (1)
North West	5/67 (7)	66/248 (27)
Western Cape	50/67 (75)	75/248 (21)
<b>Race</b>		
Black	34/64 (53)	160/200 (80)
Coloured	30/64 (47)	27/200 (13)
Asian/Indian	0/64 (0)	12/200 (6)
Other	0/64 (0)	1/200 (<1)
<b>Presentation</b>		
Fever	62/64 (97)	126/200 (63)
Cough	63/64 (98)	196/200 (98)
Shortness of breath	7/64 (11)	147/200 (74)
Tight chest	14/64 (22)	90/200 (45)
Diarrhoea	1/64 (2)	10/200 (5)

# INFLUENZA, RESPIRATORY SYNCYTIAL VIRUS AND SARS-CoV-2 SURVEILLANCE REPORT

WEEK 30 2020 | REPORTING PERIOD 02 MARCH 2020 TO 26 JULY 2020

## SUMMARY OF LABORATORY-CONFIRMED SARS-CoV-2 CASES

Characteristic	Influenza -like illness (ILI), public sector, n =67 (%)	Pneumonia surveillance, n=248 (%)
<b>Underlying conditions</b>		
Hypertension	3/64 (5)	56/197 (28)
Cardiac	0/64 (0)	1/197 (<1)
Respiratory	1/64 (2)	12/197 (6)
Diabetes	0/64 (0)	40/197 (20)
Cancer	0/64 (0)	0/197 (0)
Tuberculosis	0/64 (0)	2/197 (1)
Other**	2/64 (3)	40/197 (20)
HIV-infection	4/62 (6)	42/182 (23)
<b>Management</b>		
Oxygen therapy	0/61 (0)	78/141 (55)
ICU admission	N/A	7/139 (5)
Ventilation	N/A	4/139 (3)
<b>Outcome***</b>		
Died	0/59 (0)	12/124 (10)

\*ILI surveillance not conducted in Gauteng & Mpumalanga provinces

\*\* Chronic lung, liver and kidney disease, organ transplant, pregnancy, malnutrition, obesity, tracheostomy, prematurity, seizure, stroke, anaemia, asplenia, burns, Systemic lupus erythematosus, seizures

\*\*\* Outcome includes patients who are still hospitalised, have been discharged or referred, and those who died

**Note:** Children may be over-represented amongst hospitalised patients due to the inclusion of a large paediatric hospital in Cape Town.

Of the 12 patients who died, three were in the 30-40 year age group, five in the 41-59 year age group, and four were ≥60 years; 7/12 (58%) were female. All had underlying medical conditions.