

WEEKLY RESPIRATORY PATHOGENS SURVEILLANCE REPORT

SOUTH AFRICA WEEK 28 2020

CONTENTS

Programme descriptions	2
Comments	3
Influenza- like illness (ILI) surveillance primary health care clinics	4-7
Influenza-like illness (ILI) surveillance: Viral Watch	8-9
National syndromic surveillance for pneumonia	10-13
Summary of laboratory confirmed SARS-CoV-2 cases	14-15

CUMULATIVE DATA FROM



HIGHLIGHTS: WEEK 28

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.

Ongoing detections of RSV are being made although the 2020 RSV season only exceeded the seasonal threshold for four weeks from mid-March. In the previous 3 years the average start of the RSV season ranged between week 7 to week 9.

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 there were 43 additional patients who tested positive for SARS-CoV-2 in SARI (32), VW (4) and ILI (7) surveillance programs. To date, 186 cases have been detected from all surveillance programmes.

In this report, we report an additional 7 deaths in patients hospitalised with SARI who tested positive for SARS-CoV-2, which brings the total of deaths to 10, case fatality ratio, 13% (10/79). All deaths had underlying medical conditions

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

WEEK 28 2020 | REPORTING PERIOD 01 JANUARY 2020 TO 12 JULY 2020

PROGRAMME DESCRIPTIONS

Programme	Influenza-like illness (ILI)	Viral Watch	National syndromic surveillance for pneumonia
Start year	2012	1984	2009
Provinces*	KZ NW WC**	EC FS GP LP MP NC NW WC	GP KZ MP NW WC
Type of site	Primary health care clinics	General practitioners	Public 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
Specimens collected	Oropharyngeal & nasopharyngeal swabs	Throat and/or nasal swabs or Nasopharyngeal swabs	Oropharyngeal & nasopharyngeal swabs
Main pathogens tested***	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

WEEK 28 2020 | REPORTING PERIOD 01 JANUARY 2020 TO 12 JULY 2020

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 741 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 262 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. (Figure 4 and Table4).

Pneumonia surveillance: Since the beginning of 2020, specimens from 1845 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

The 2020 RSV season has not yet started. Ongoing detections of RSV are being made but have not exceeded the seasonal threshold since the week ending 3 May. In the previous 3 years the average start of RSV season ranged between mid-February to early March.

ILI programme: In 2020 to date, 741 specimens were tested and RSV was detected in specimens of seven (<1%) patients.

Viral Watch programme: During the same period,

262 specimens were tested and RSV has not been detected.

Pneumonia surveillance: Since the beginning of 2020, 1845 specimens were tested and RSV was detected in specimens of 119 (6%) 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 496 patients were tested and SARS-CoV-2 was detected in 43 (9%) patients.

Viral Watch programme: In 2020 to date, specimens were tested from 160 patients and SARS-CoV-2 was detected in 12 (8%) patients.

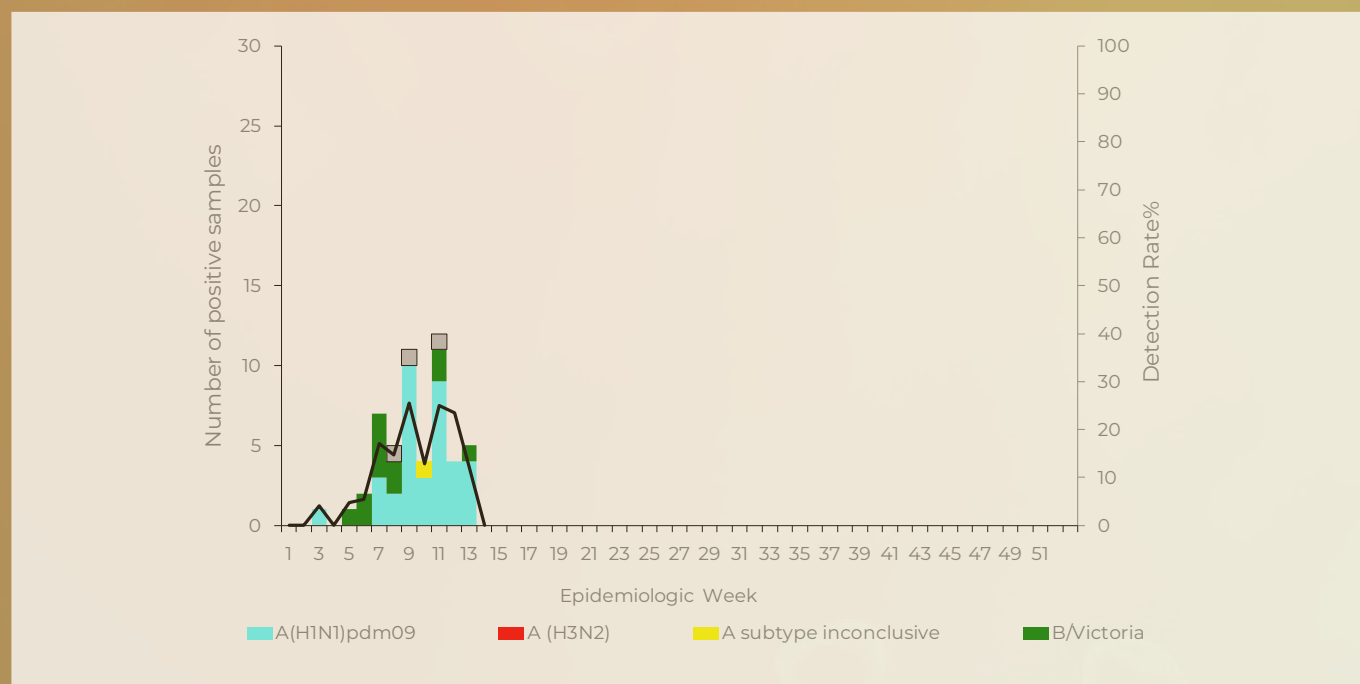
Pneumonia surveillance: In 2020 to date, specimens from 1352 patients with severe respiratory illness (SRI) were tested and SARS-CoV-2 was detected in 174 (13%) patients.

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

WEEK 28 2020 | REPORTING PERIOD 01 JANUARY 2020 TO 12 JULY 2020

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	335
Edendale Gateway (KZ)	0	0	0	0	0	0	102
Jouberton (NW)	0	0	0	0	0	0	131
Mitchell's Plain (WC)	3	0	0	0	0	0	173
Total:	36	0	1	12	0	3	741

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

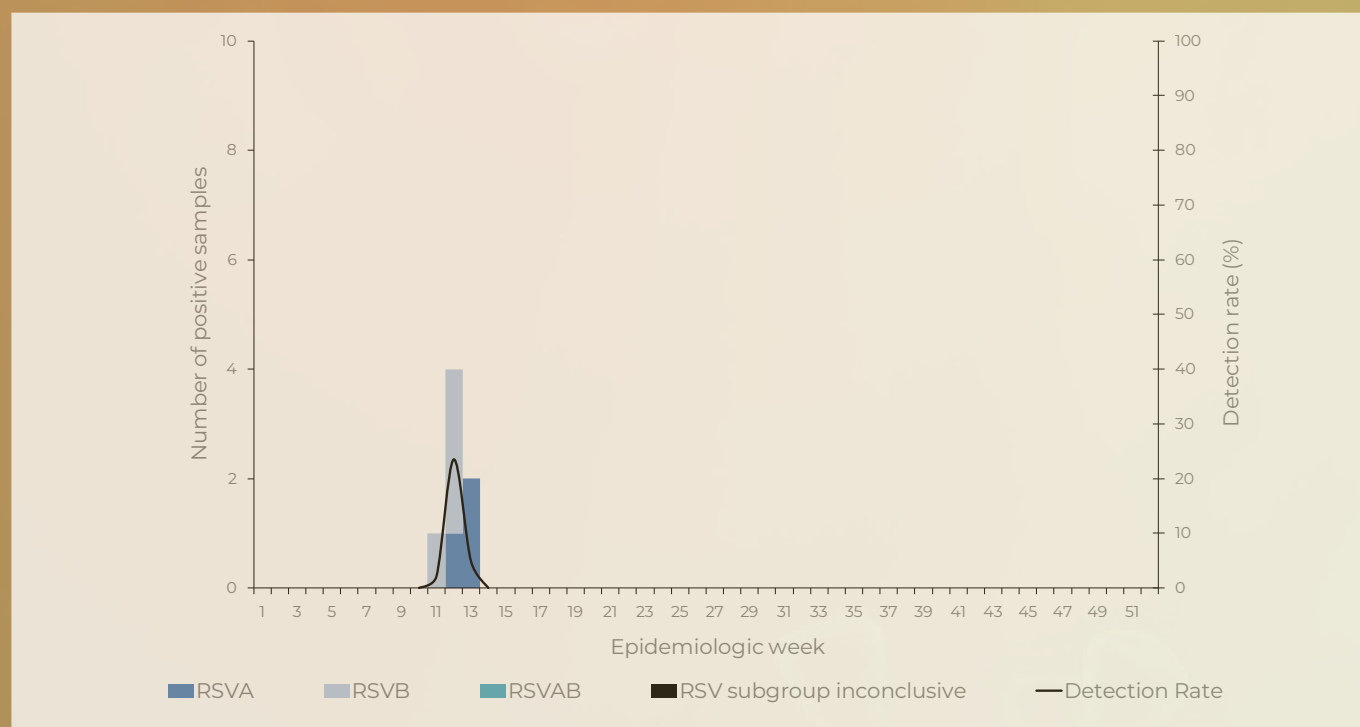
Inconclusive: insufficient viral load in sample and unable to characterise further

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

WEEK 28 2020 | REPORTING PERIOD 01 JANUARY 2020 TO 12 JULY 2020

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	335
Edendale Gateway (KZ)	3	2	0	0	102
Jouberton (NW)	0	0	0	0	131
Mitchell's Plain (WC)	0	0	0	0	173
Total:	3	4	0	0	741

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

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

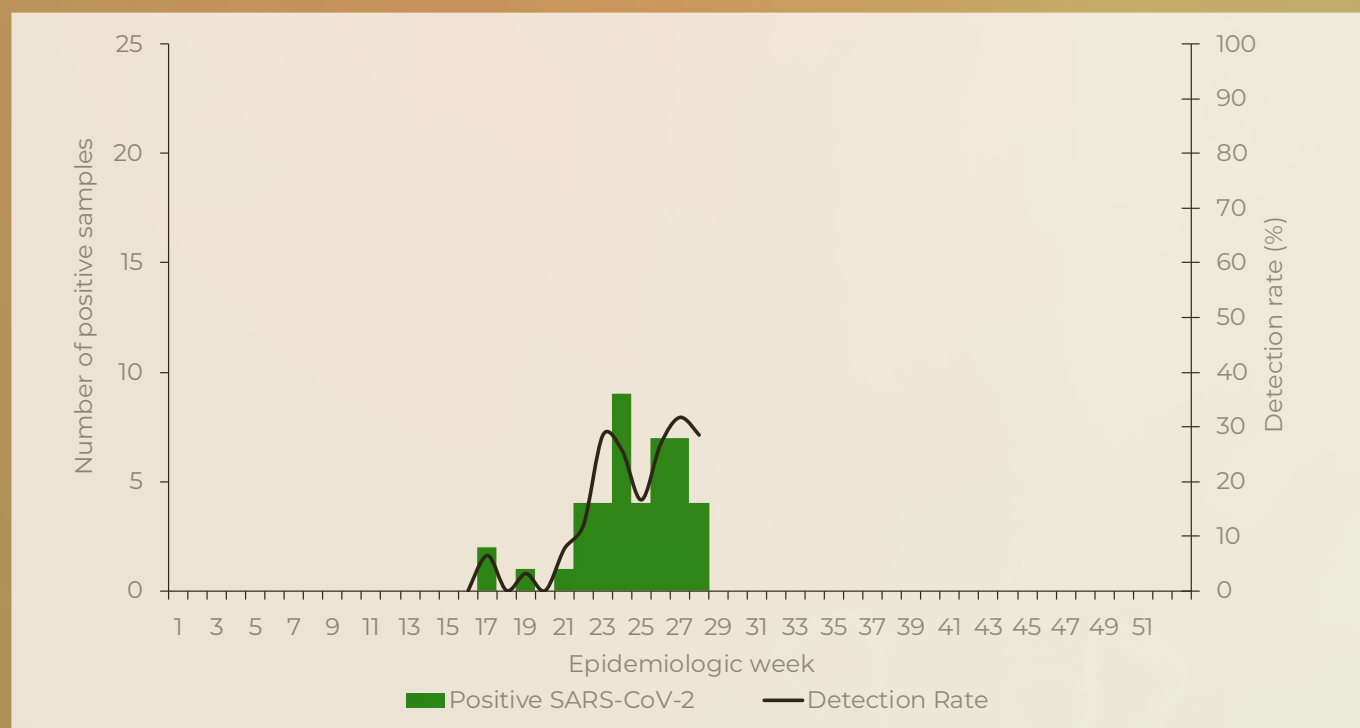
RSV AB: Both RSV A and B subgroup identified

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

WEEK 28 2020 | REPORTING PERIOD 02 MARCH 2020 TO 12 JULY 2020

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)	17	232
Edendale Gateway (KZ)	9	52
Jouberton (NW)	1	82
Mitchell's Plain (WC)	16	130
Total:	43	496

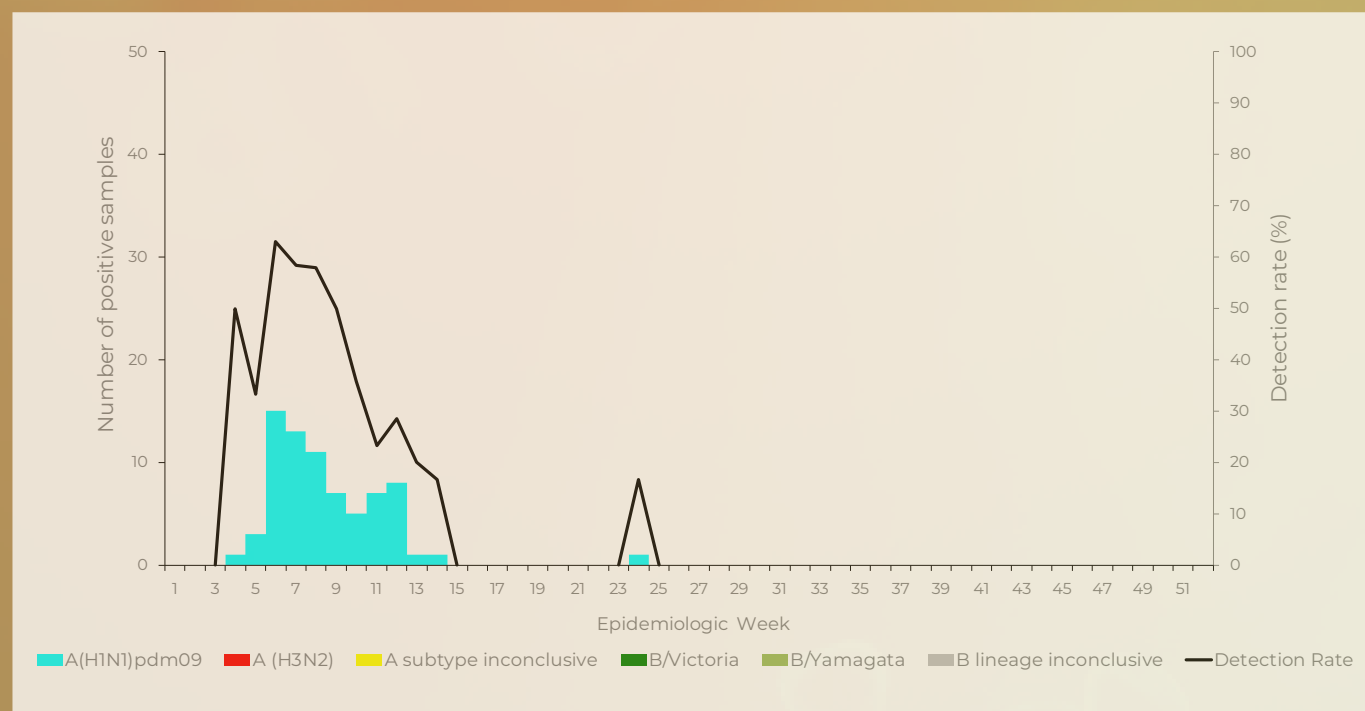
KZ: KwaZulu-Natal; NW: North West; WC: Western Cape

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

WEEK 28 2020 | REPORTING PERIOD 01 JANUARY 2020 TO 12 JULY 2020

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	85
Limpopo	0	0	0	0	0	0	3
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	75	0	0	0	0	0	153
Total:	76	0	0	0	0	0	262

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).

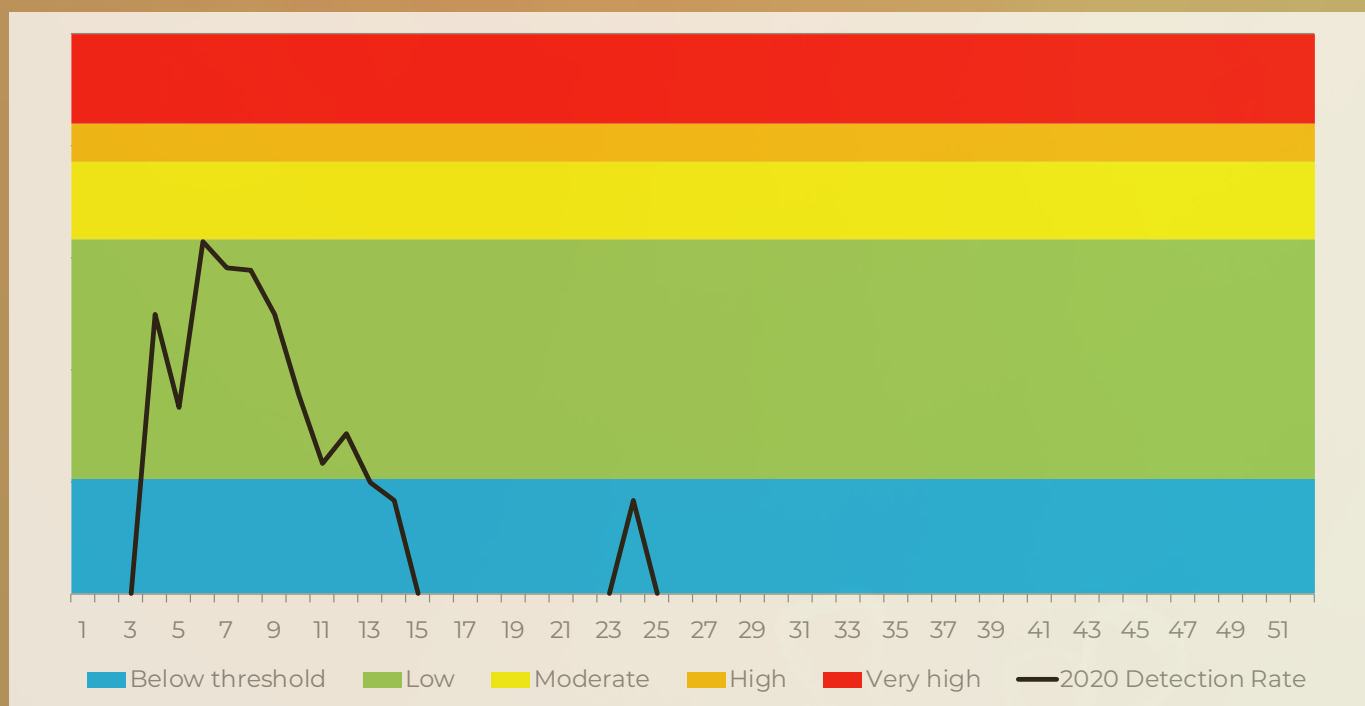
Patients known to have acquired influenza abroad are not included in the table or epidemiological curve.

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

WEEK 28 2020 | REPORTING PERIOD 01 JANUARY 2020 TO 12 JULY 2020

INFLUENZA-LIKE ILLNESS (ILI) SURVEILLANCE VIRAL WATCH

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



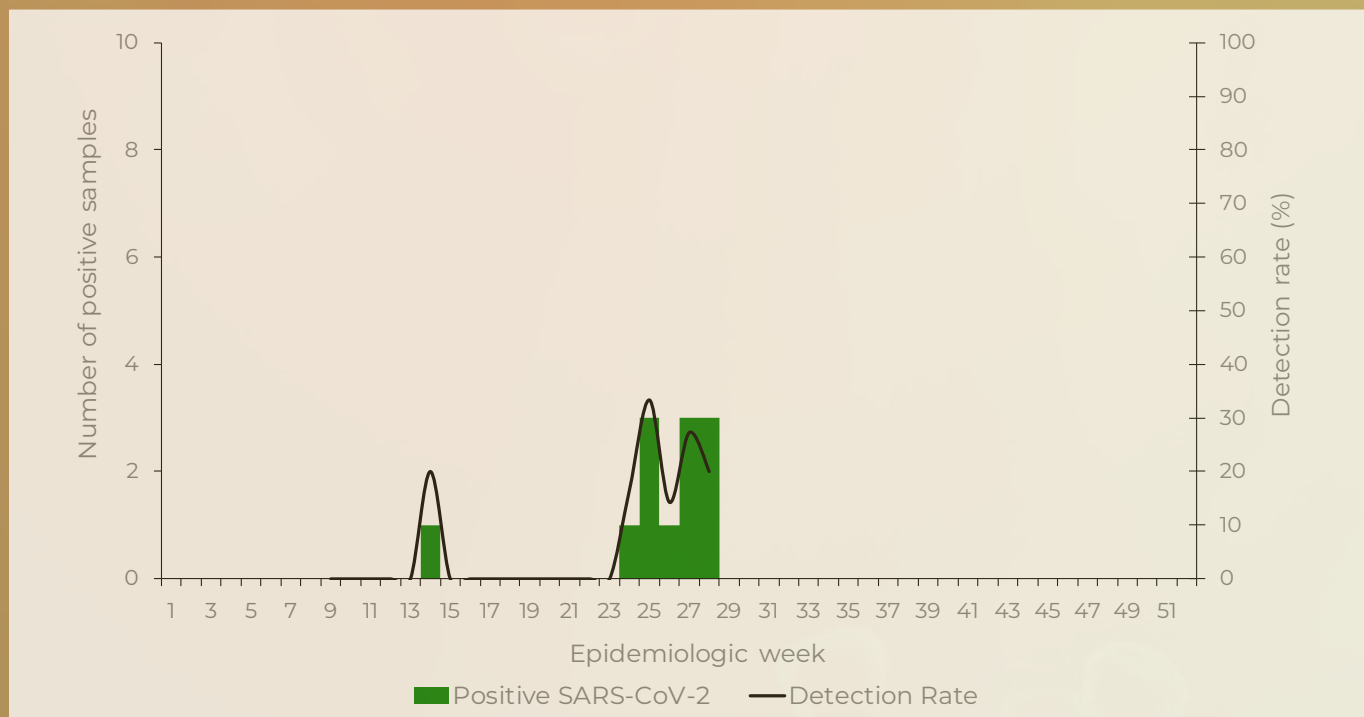
*Thresholds based on 2010-2019 data

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

WEEK 28 2020 | REPORTING PERIOD 02 MARCH 2020 TO 12 JULY 2020

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

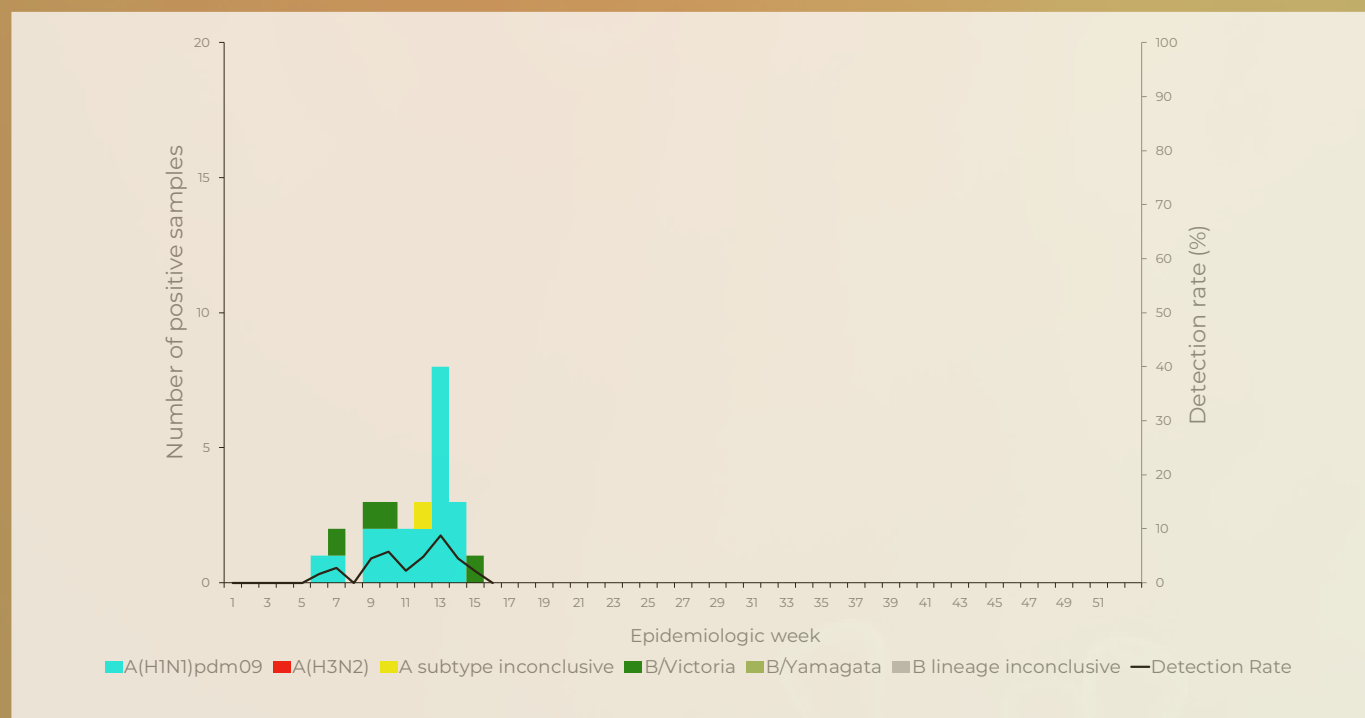
Province	SARS-CoV-2 positive	Total samples tested
Eastern Cape	0	4
Free State	0	11
Gauteng	8	76
Limpopo	0	2
Mpumalanga	0	0
North West	0	0
Northern Cape	0	2
Western Cape	4	65
Total:	12	160

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

WEEK 28 2020 | REPORTING PERIOD 01 JANUARY 2020 TO 12 JULY 2020

NATIONAL SYNDROMIC SURVEILLANCE FOR PNEUMONIA

Figure 7. Number of positive samples* by influenza subtype and lineage and detection rate** by week



*Specimens from patients hospitalized 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	274
Helen Joseph-Rahima Moosa (GP)	0	0	0	0	0	0	486
Klerksdorp-Tshepong (NW)	0	0	0	0	0	0	290
Mpumalanga - Matikwana (MP)	0	0	0	0	0	0	143
Red Cross (WC)	19	0	0	2	0	0	462
Mitchellsplain (WC)	2	0	1	2	0	0	190
Total:	21	0	1	4	0	0	1 845

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

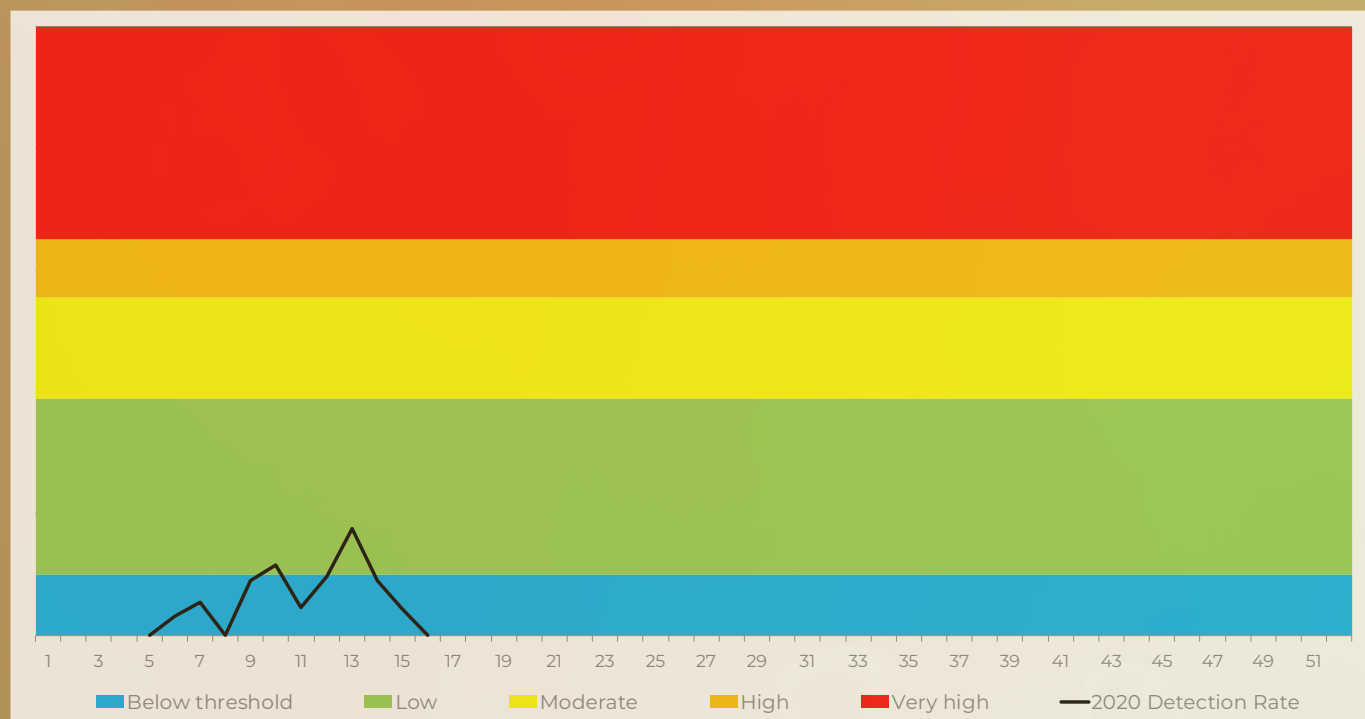
Inconclusive: insufficient viral load in sample and unable to characterise further

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

WEEK 28 2020 | REPORTING PERIOD 01 JANUARY 2020 TO 12 JULY 2020

NATIONAL SYNDROMIC SURVEILLANCE FOR PNEUMONIA

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



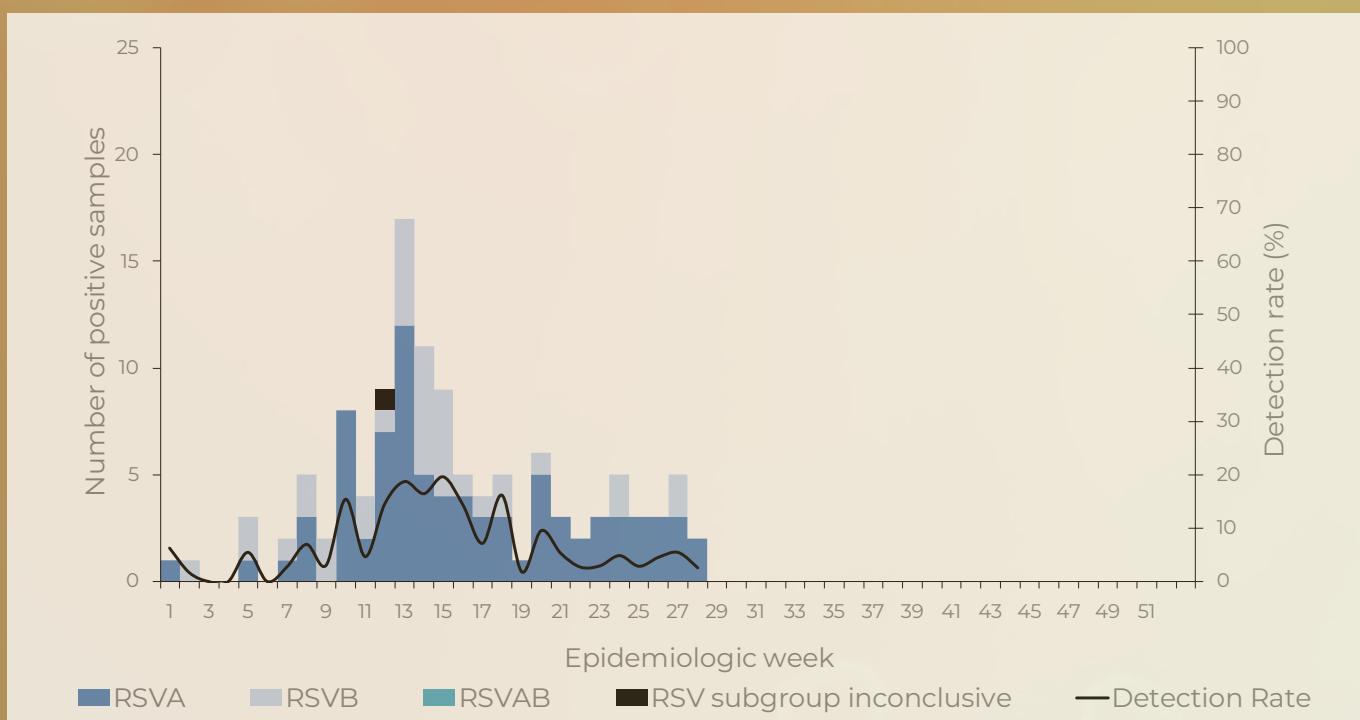
*Thresholds based on 2010-2019 data

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

WEEK 28 2020 | REPORTING PERIOD 01 JANUARY 2020 TO 12 JULY 2020

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	274
Helen Joseph Rahima Moosa (GP)	34	10	0	0	486
Klerksdorp (NW)	1	0	0	0	290
Mapulaneng-Matikwana (MP)	0	0	0	0	143
Red Cross (WC)	43	17	0	0	462
Mitchell's Plain (WC)	2	0	0	0	190
Total:	82	36	0	1	1845

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

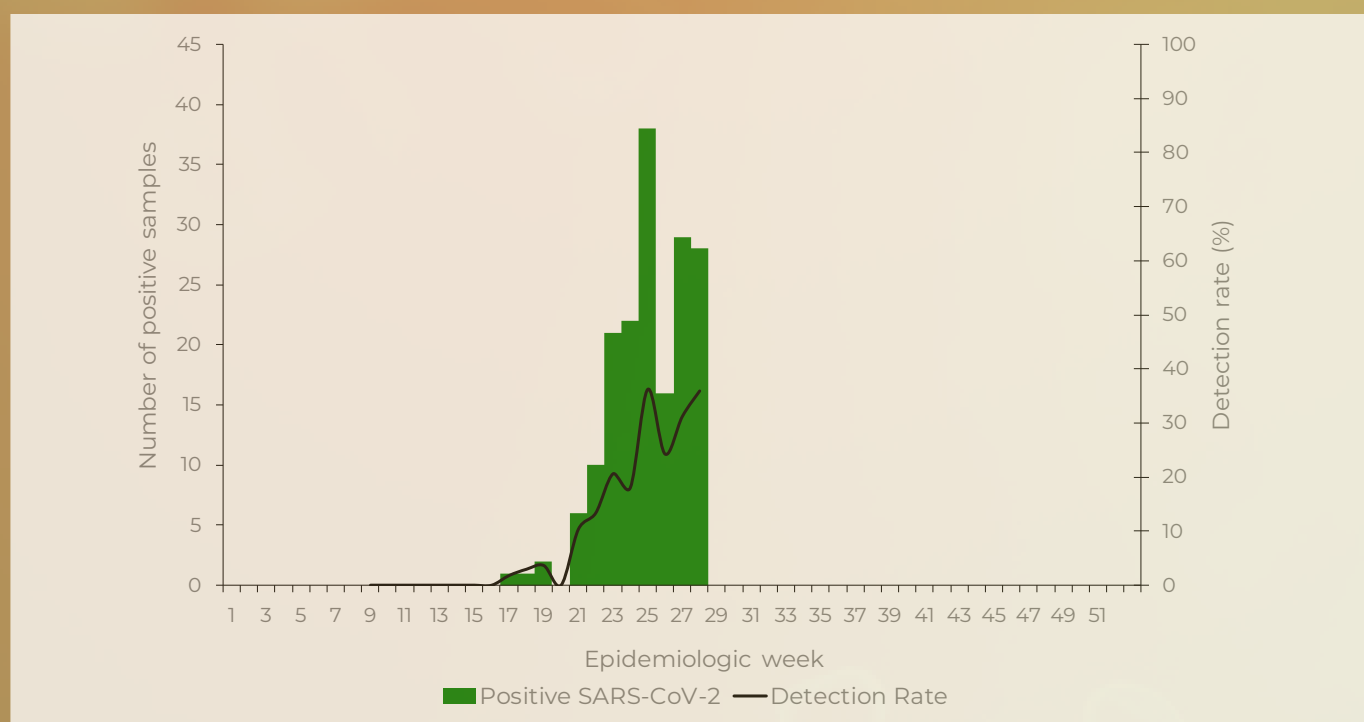
Inconclusive: insufficient viral load in sample and unable to characterise further
 RSV AB: Both RSV A and B subgroup identified

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

WEEK 28 2020 | REPORTING PERIOD 02 MARCH 2020 TO 12 JULY 2020

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)	18	205
Helen Joseph-Rahima Moosa (GP)	78	371
Klerksdorp-Tshepong (NW)	38	217
Mapulaneng-Matikwana (MP)	3	95
Red Cross (WC)	13	320
Mitchell's Plain (WC)	24	144
Total:	174	1352

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

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

WEEK 28 2020 | REPORTING PERIOD 02 MARCH 2020 TO 12 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- 15 July 2020

Characteristic	Influenza -like illness (ILI), public sector, n =43 (%)	Pneumonia surveillance, n=174 (%)
Age group		
0-9	12/43 (28)	16/174 (9)
10-19	3/43 (7)	4/174 (2)
20-29	12/43 (28)	17/174 (10)
30-39	9/43 (21)	41/174 (24)
40-49	4/43 (9)	31/174 (18)
50-59	3/43 (7)	35/174 (20)
60-69	0/43 (0)	21/174 (12)
70-79	0/43 (0)	8/174 (5)
≥80	0/43 (0)	1/174 (1)
Sex-female	23/43 (53)	107/172 (62)
Province*		
Gauteng	0/36 (0)	84/174 (59)
KZN	4/36 (11)	1/174 (1)
North West	1/36 (3)	26/174 (18)
Western Cape	31/36 (86)	30/174 (21)
Race		
Black	22/41 (54)	115/147 (78)
Coloured	19/41 (46)	20/147 (14)
Asian/Indian	0/41 (0)	11/147 (8)
Other	0/41 (0)	1/147 (1)
Presentation		
Fever	41/41 (100)	92/145 (63)
Cough	40/41 (2)	144/148 (97)
Shortness of breath	4/41 (9)	102/147 (69)
Tight chest	0/24 (0)	5/87 (6)
Diarrhoea	1/41 (2)	8/147 (5)

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

WEEK 28 2020 | REPORTING PERIOD 02 MARCH 2020 TO 12 JULY 2020

SUMMARY OF LABORATORY-CONFIRMED SARS-CoV-2 CASES

Characteristic	Influenza -like illness (ILI), public sector, n =43 (%)	Pneumonia surveillance, n=174 (%)
Underlying conditions		
Hypertension	1/24 (4)	21/87 (24)
Cardiac	0/40 (0)	1/144 (1)
Respiratory	1/41 (2)	10/145 (0)
Diabetes	0/41 (0)	30/145 (21)
Cancer	0/41 (0)	0/144 (0)
Tuberculosis	0/41 (0)	2/87 (2)
Other**	0/41 (0)	12/144 (8)
HIV-infection	0/41 (0)	27/146 (18)
Obesity	0/41(0)	16/145 (11)
Management		
Oxygen therapy	0/41 (0)	48/148 (32)
ICU admission	N/A	5/148 (3)
Ventilation	N/A	4/87 (5)
Outcome***		
Died	0/36 (0)	10/79 (13)

*Only provinces with positive cases included in the table, ILI surveillance not conducted in Gauteng Province; ** Chronic liver conditions, malnutrition, tracheostomy, prematurity, seizure, stroke, asthma, chronic lung disease, includes liver, renal, artery, therapy, organ, anaemia, asplenia, burns, immune, sle, nephron, spinal, seizure, emphysema; ***Outcome accounts for patient's discharged, still admitted, referred and those that died. Therefore those that haven't died are discharged/referred or still admitted

Note: Ten patients died, two were in the 30-40 year age group, four were in the 50-59 year age group, and four were 60 years and older. Fifty percent (5/10) were female. All had underlying medical conditions. Children may be over-represented among hospitalised patients due to the inclusion of a large paediatric hospital in Cape Town.