

WEEKLY RESPIRATORY PATHOGENS SURVEILLANCE REPORT

SOUTH AFRICA WEEK 32 2020

CONTENTS

Surveillance programme description	2
• Epidemic Threshold	2
Comments	3
• Influenza	3
• Respiratory syncytial virus	3
• SARS-CoV-2	3
Influenza-like illness (ILI) surveillance primary health care clinics	4
Influenza-like illness (ILI) surveillance Viral Watch	7
National syndromic surveillance for pneumonia	10
Summary of laboratory confirmed SARS-CoV-2 cases	14

CUMULATIVE DATA FROM



HIGHLIGHTS: WEEK 32

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 since week 29 (week ending 19 July) in the pneumonia surveillance programme and to a lesser extent in the ILI programme.

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 fewer positives than the previous weeks. An additional 43 patients tested positive for SARS-CoV-2 in SARI (36) and ILI (7). To date, 461 cases have been detected from all surveillance programmes.

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

WEEK 32 2020 | REPORTING PERIOD 1 JANUARY 2020 TO 9 AUGUST 2020

PROGRAMME DESCRIPTIONS

Programme	Influenza-like illness (ILI)	Viral Watch	National syndromic surveillance for pneumonia
Start year	2012	1984	2009
Provinces*	KZ	EC	GP
	NW	FS	KZ
	WC**	GP	MP
		LP	NW
		MP	WC
		NC	
		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 (symptom onset ≤ 10 days) or chronic (symptom onset > 10) 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 32 2020 | REPORTING PERIOD 1 JANUARY 2020 TO 9 AUGUST 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 889 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 (Figure 1 and Table 1).

Viral Watch programme: During the same period, specimens were received from 300 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 Table 4)

Pneumonia surveillance: Since the beginning of 2020, specimens from 2316 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) (Figure 7 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 since week 29 (week ending 19 July) in the pneumonia surveillance programme and to a lesser extent in the ILI programme.

ILI programme: In 2020 to date, 889 specimens were tested and RSV was detected in specimens of 14 (1.6%) patients.

Viral Watch programme: During the same period, 300 specimens were tested and RSV has not been detected.

Pneumonia surveillance: Since the beginning of 2020, 2316 specimens were tested and RSV was detected in specimens of 177 (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 656 patients were tested and SARS-CoV-2 was detected in 96 (15%) patients.

Viral Watch programme: In 2020 to date, specimens were tested from 186 patients and SARS-CoV-2 was detected in 21 (11%) patients.

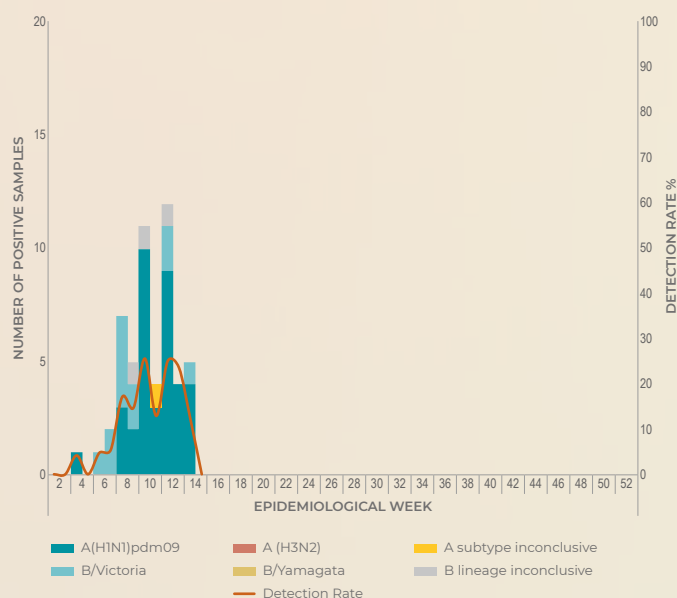
Pneumonia surveillance: In 2020 to date, specimens from 1825 patients with severe respiratory illness (SRI) were tested and SARS-CoV-2 was detected in 344 (19%) patients.

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

WEEK 32 2020 | REPORTING PERIOD 1 JANUARY 2020 TO 9 AUGUST 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	379
Edendale Gateway (KZ)	0	0	0	0	0	0	114
Jouberton (NW)	0	0	0	0	0	0	177
Mitchell's Plain (WC)	3	0	0	0	0	0	219
Total:	36	0	1	12	0	3	889

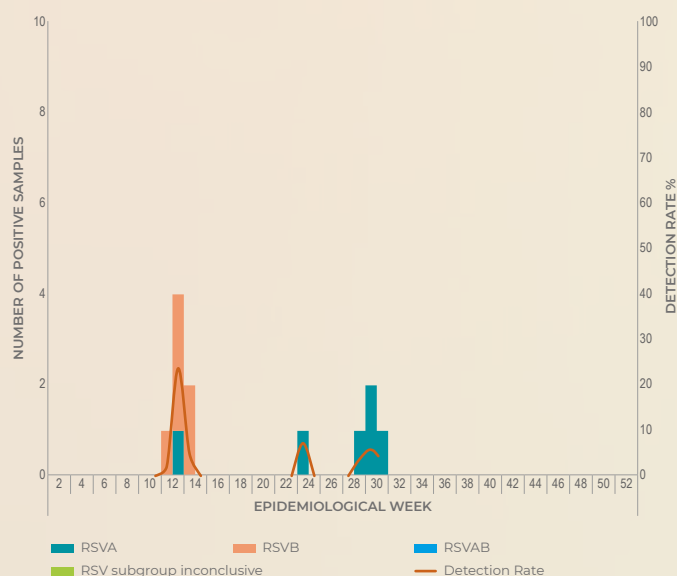
KZ: KwaZulu-Natal; NW: North West; WC: Western Cape
Inconclusive: insufficient viral load in sample and unable to characterise further

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

WEEK 32 2020 | REPORTING PERIOD 1 JANUARY 2020 TO 9 AUGUST 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)	RSV positive	RSVA	RSVB	RSVAB	RSV subgroup inconclusive	Total samples
Eastridge (WC)	8	5	3	0	0	379
Edendale Gateway (KZ)	5	1	4	0	0	114
Jouberton (NW)	0	0	0	0	0	177
Mitchell's Plain (WC)	1	1	0	0	0	219
Total	15	8	7	0	0	889

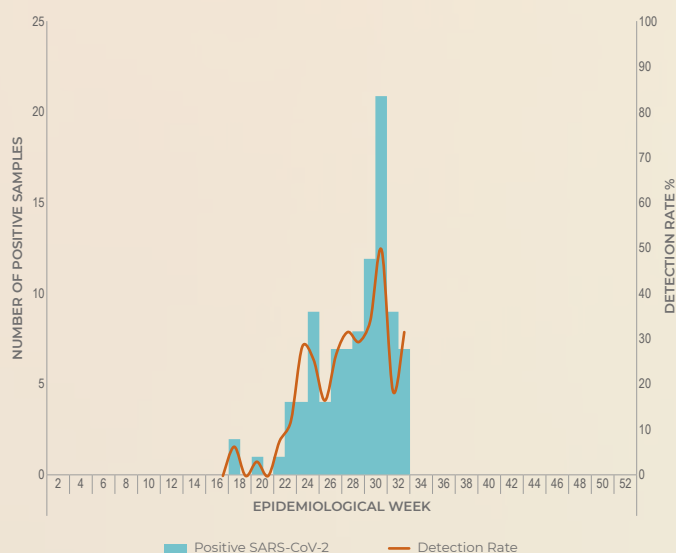
KZ: KwaZulu-Natal; NW: North West; WC: Western Cape
Inconclusive: insufficient viral load in sample and unable to characterise further
RSV AB: Both RSV A and B subgroup identified

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

WEEK 32 2020 | REPORTING PERIOD 1 JANUARY 2020 TO 9 AUGUST 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)	23	276
Edendale Gateway (KZ)	17	64
Jouberton (NW)	21	129
Mitchell's Plain (WC)	35	187
Total:	96	656

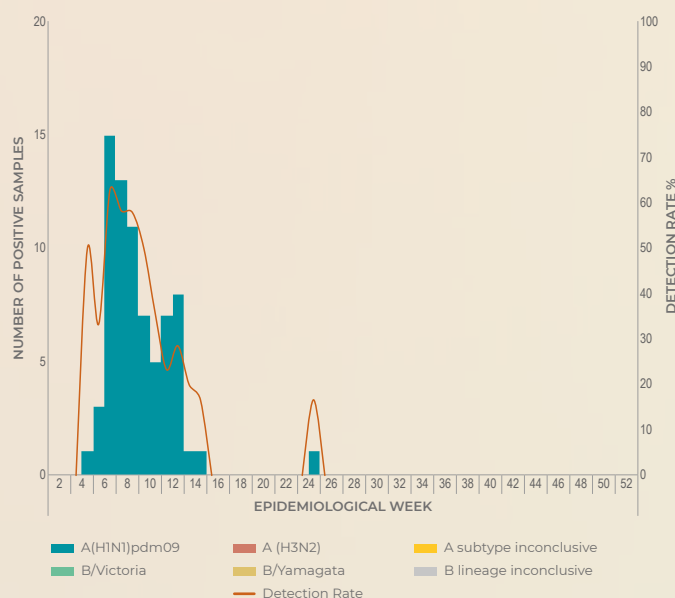
KZ: KwaZulu-Natal; NW: North West; WC: Western Cape

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

WEEK 32 2020 | REPORTING PERIOD 1 JANUARY 2020 TO 9 AUGUST 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

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	114
Limpopo	0	0	0	0	0	0	3
Mpumalanga	0	0	0	0	0	0	7
North West	0	0	0	0	0	0	4
Northern Cape	0	0	0	0	0	0	0
Western Cape	75	0	0	0	0	0	157
Total:	76	0	0	0	0	0	300

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).

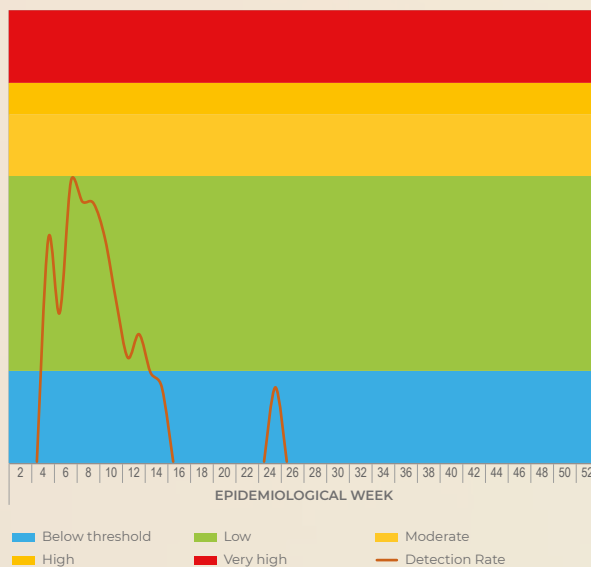
Patients known to have acquired influenza abroad are not included in the table or epidemiological curve.

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

WEEK 32 2020 | REPORTING PERIOD 1 JANUARY 2020 TO 9 AUGUST 2020

INFLUENZA-LIKE ILLNESS (ILI) SURVEILLANCE VIRAL WATCH

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



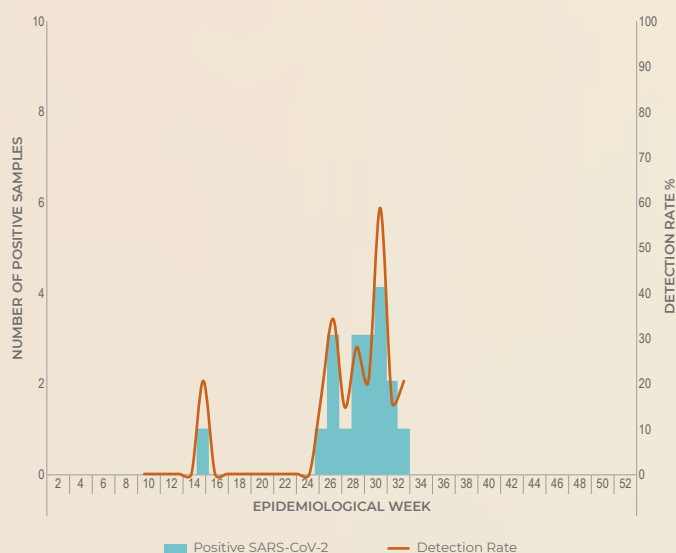
*Thresholds based on 2010-2019 data

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

WEEK 32 2020 | REPORTING PERIOD 1 JANUARY 2020 TO 9 AUGUST 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

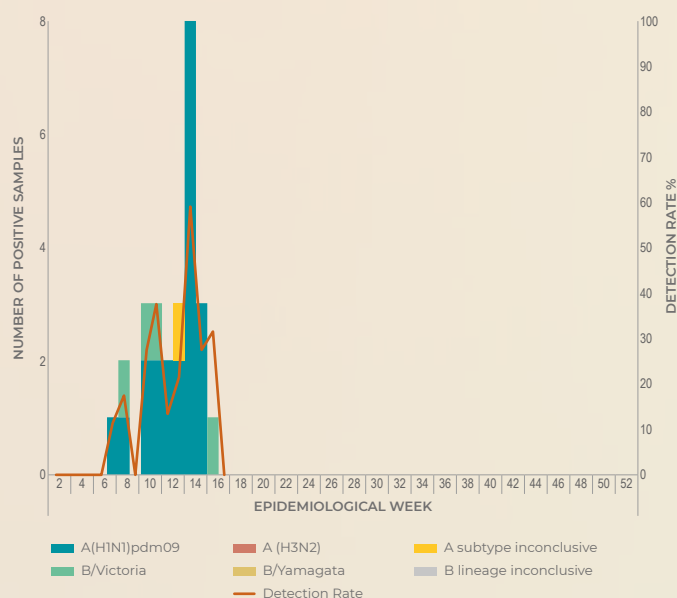
Province	SARS-CoV-2 positive	Total samples tested
Eastern Cape		4
Free State		11
Gauteng	17	96
Limpopo		2
Mpumalanga		4
North West		
Northern Cape		2
Western Cape	4	67
Total:	21	186

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

WEEK 32 2020 | REPORTING PERIOD 1 JANUARY 2020 TO 9 AUGUST 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 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	358
Helen Joseph-Rahima Moosa (GP)	0	0	0	0	0	0	564
Klerksdorp-Tshepong (NW)	0	0	0	0	0	0	402
Mapulaneng-Matikwana (MP)	0	0	0	0	0	0	155
Red Cross (WC)	19	0	0	2	0	0	261
Mitchell's Plain (WC)	2	0	1	2	0	0	576
Total:	21	0	1	4	0	0	2316

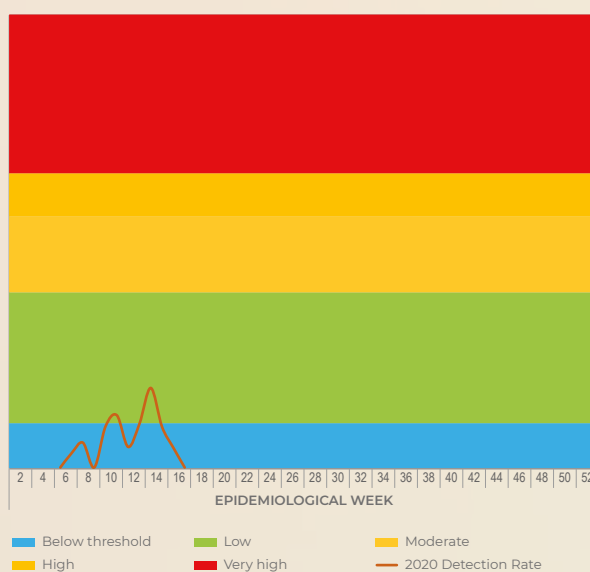
GP: Gauteng; KZ: KwaZulu-Natal; NW: North West; MP: Mpumalanga; WC: Western Cape
 Inconclusive: insufficient viral load in sample and unable to characterise further

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

WEEK 32 2020 | REPORTING PERIOD 1 JANUARY 2020 TO 9 AUGUST 2020

NATIONAL SYNDROMIC SURVEILLANCE FOR PNEUMONIA

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



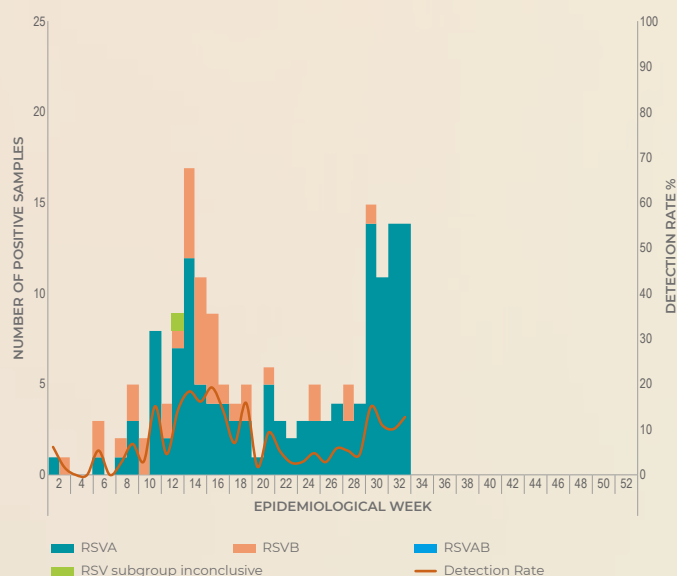
*Thresholds based on 2010-2019 data

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

WEEK 32 2020 | REPORTING PERIOD 1 JANUARY 2020 TO 9 AUGUST 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

Hospital (Province)	RSVA	RSVB	RSVAB	RSV subgroup inconclusive	Total samples
Edendale (KZ)	2	9	0	1	358
Helen Joseph-Rahima Moosa (GP)	36	10	0	0	564
Klerksdorp-Tshepong (NW)	2	0	0	0	402
Mapulaneng-Matikwana (MP)	0	0	0	0	155
Red Cross (WC)	13	0	0	0	261
Mitchell's Plain (WC)	85	19	0	0	576
Total:	138	38	0	1	2316

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

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

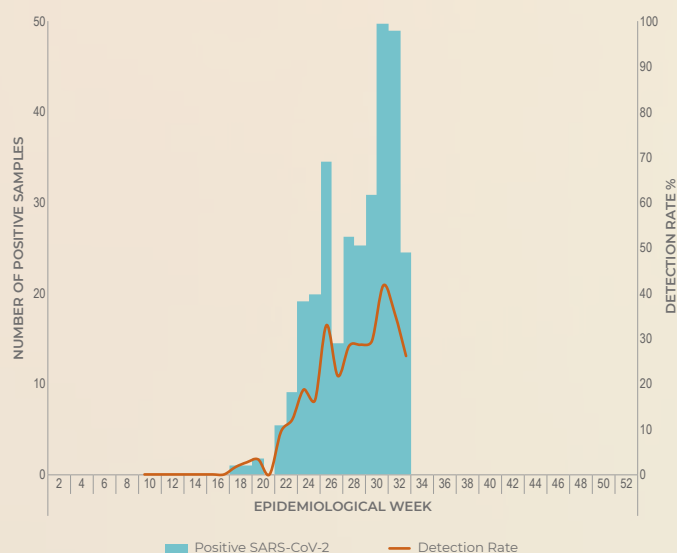
RSV AB: Both RSV A and B subgroup identified

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

WEEK 32 2020 | REPORTING PERIOD 1 JANUARY 2020 TO 9 AUGUST 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 hospitalised 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)	65	288
Helen Joseph-Rahima Moosa (GP)	106	445
Klerksdorp-Tshepong (NW)	104	336
Mapulaneng-Matikwana (MP)	4	107
Red Cross (WC)	44	215
Mitchell's Plain (WC)	21	434
Total:	344	1825

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

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

WEEK 32 2020 | REPORTING PERIOD 1 JANUARY 2020 TO 9 AUGUST 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 - 9 August 2020

Characteristic	Influenza-like illness (ILI), public-sector, n=96 (%)	Pneumonia surveillance, n=344 (%)
Age group		
0-9	17/96 (18)	28/341 (8)
10-19	12/96 (13)	3/341 (1)
20-29	26/96 (27)	21/341 (6)
30-39	20/96 (21)	51/341 (15)
40-49	12/96 (13)	49/341 (14)
50-59	5/96 (5)	86/341 (25)
60-69	4/96 (4)	70/341 (21)
70-79	0/96 (0)	28/341 (8)
≥80	0/96 (0)	5/341 (1)
Sex-female	53/93 (57)	212/343 (62)
Province*		
Gauteng	N/A	106/344 (31)
KwaZulu-Natal	17/96 (18)	65/344 (19)
Mpumalanga	N/A	4/344 (1)
North West	21/96 (22)	104/344 (30)
Western Cape	58/96 (60)	65/344 (19)
Race		
Black	41/80 (51)	220/272 (81)
Coloured	39/80 (49)	35/272 (13)
Asian/Indian	0/80 (0)	14/272 (5)
Other	0/80 (0)	3/272 (1)
Presentation		
Fever	78/80 (98)	165/272 (61)
Cough	79/80 (99)	268/272 (99)
Shortness of breath	8/80 (10)	206/272 (76)
Tight chest	17/80 (21)	133/272 (49)
Diarrhoea	2/80 (3)	14/272 (5)
Underlying conditions		
Hypertension	3/80 (4)	85/269 (32)
Cardiac	0/80 (0)	6/269 (2)
Respiratory	1/80 (1)	14/269 (5)
Diabetes	1/80 (1)	58/269 (22)
Cancer	0/80 (0)	1/269 (<1)
Tuberculosis	0/80 (0)	3/269 (<1)
Other**	4/80 (5)	53/269 (20)
HIV-infection	6/78 (8)	59/239 (25)
Management		
Oxygen therapy	0/77 (0)	121/202 (60)
ICU admission	N/A	8/202 (4)
Ventilation	N/A	4/202 (2)
Outcome***		
Died	0/75 (0)	21/192(11)

* 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, four were in the 30-40 year age group, nine in the 41-59 year age group, and eight were ≥60 years; 14/21 (67%) were female. All except two had underlying medical conditions