COVID-19 TESTING SUMMARY

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

SOUTH AFRICA | WEEK 8 2021

OVERVIEW OF REPORT

This report summarises national laboratory testing for SARS-CoV-2, the virus causing COVID-19, in South Africa. This report is based on data for specimens reported up to 27 February 2021 (Week 8 of 2021).

HIGHLIGHTS

- In the period 1 March 2020 through 27 February 2021, 9,013,867 PCR and antigen tests for SARS-CoV-2 have been performed nationally.
- The number of tests performed in week 8 of 2021 (n=169,734) was similar to the previous 3 weeks.
- Testing rates were highest in week 8 in the Western Cape (409 per 100,000 persons) and Gauteng (375 per 100,000 persons) provinces, and lowest in Limpopo (81 per 100,000 persons).
- In week 8 the percentage testing positive was 5.7%, which had decreased from a peak of 34.7% in week 53 of 2020 and was lower than observed since May 2020.
- The percentage testing positive in week 8 was highest in the Northern Cape (10.6%) and Mpumalanga (9.7%) provinces. The percentage testing positive was 5-9% in the Western Cape, Free State, KwaZulu-Natal, North West and Limpopo, and was <5% in the Eastern Cape and Gauteng.
- In week 8, compared to the previous week, the percentage testing positive decreased in the Western Cape, Eastern Cape, Gauteng and Limpopo, and was unchanged in the Northern Cape, Free State, KwaZulu-Natal, North West and Mpumalanga.
- Mean laboratory turnaround time in week 8 was 1.1 days; 1.4 days in the public sector and <1 day in the private sector.

Methods

Testing for SARS-CoV-2 began on 28 January 2020 at the NICD and after the first case was confirmed on 5th March 2020, testing was expanded to a larger network of private and NHLS laboratories. Laboratory testing was conducted for people meeting the case definition for persons under investigation (PUI). This definition was updated several times over the reporting period but at different times included (i) symptomatic individuals seeking testing, (ii) hospitalised individuals for whom testing was done, (iii) individuals in high-risk occupations, (iv) individuals in outbreak settings, and (v) individuals identified through community screening and testing (CST) programmes which were implemented in April 2020 and was discontinued from the week beginning 17th May. CST was implemented differently in different provinces, and ranged from mass screening approaches (including asymptomatic individuals) to screening of individuals in contact with a confirmed case to targeted testing of clusters of cases. Respiratory specimens were submitted to testing laboratories. Testing was performed using reverse transcriptase real-time PCR, which detects SARS-CoV-2 viral genetic material. Laboratories used any one of several in-house and commercial PCR assays to test for the presence of SARS-CoV-2 RNA. Testing for SARS-CoV-2 using rapid antigen-based tests was implemented towards the end of October 2020. Results of reported rapid antigen-based tests are included in this report, however data are incomplete and efforts are ongoing to improve data completeness.

Test results were automatically fed into a data warehouse after result authorisation. We excluded specimens collected outside South Africa and duplicate entries of the same test for an individual. From week 48 of 2020 onwards, test data were reported from the Notifiable Medical Conditions Surveillance System (NMCSS). Date of specimen receipt in the laboratory was used when date of specimen collection was missing. Proportion testing positive (PTP) was calculated as the number of positive tests/total number of tests and presented as percentage by multiplying with 100. We used 2020 mid-year population estimates from Statistics South Africa to calculate the testing rate, expressed as tests per 100,000 persons. Patient admission status for public and private sector tests was determined based on the reported patient facility. Laboratory turnaround times were calculated for PCR-based tests and were calculated as the mean number of days between specimen collection and reporting of the result. Categorical variables were compared using the chi-squared test, and continuous variables with the students t-test, with a P-value<0.05 considered statistically significant.

Health district and sub-district (in the metros) level results were mapped based on geo-locatable public and private sector testing facilities. Estimates of overall prevalence were derived using regression techniques. Estimates were adjusted to produce district-specific positive test prevalences based on the national average age and sex profile of testing for that week. This adjustment allows more accurate comparison of the proportion testing positive across districts.

The report includes tests conducted between 1 March 2020 (week 10 of 2020), the week when the first case of COVID-19 was confirmed, and 27 February 2021 (week 8 of 2021).

Testing volumes and proportion testing positive

From 1 March 2020 through 27 February 2021, 9,013,867 laboratory tests (PCR and antigen tests) for SARS-CoV-2 were performed. The number of tests performed increased weekly from week 10 of 2020, with the highest number of tests performed during the first wave occurring in week 28 of 2020 (n=307,902), and subsequently decreased. Weekly testing volumes increased again from week 47 (beginning 15 November 2020), with the highest weekly number of tests since the start of the pandemic performed in week 1 of 2021 (n=498,044). In week 8 of 2021, 169,734 tests were performed, lower than the number of weekly tests performed since week 48 (beginning 22 November 2020). Weekly testing volumes have remained relatively consistent since week 5 of 2021. All tests for samples collected in the previous week may not yet be reflected. Reduced testing volumes were observed over weekends and public holidays (Figure 1).

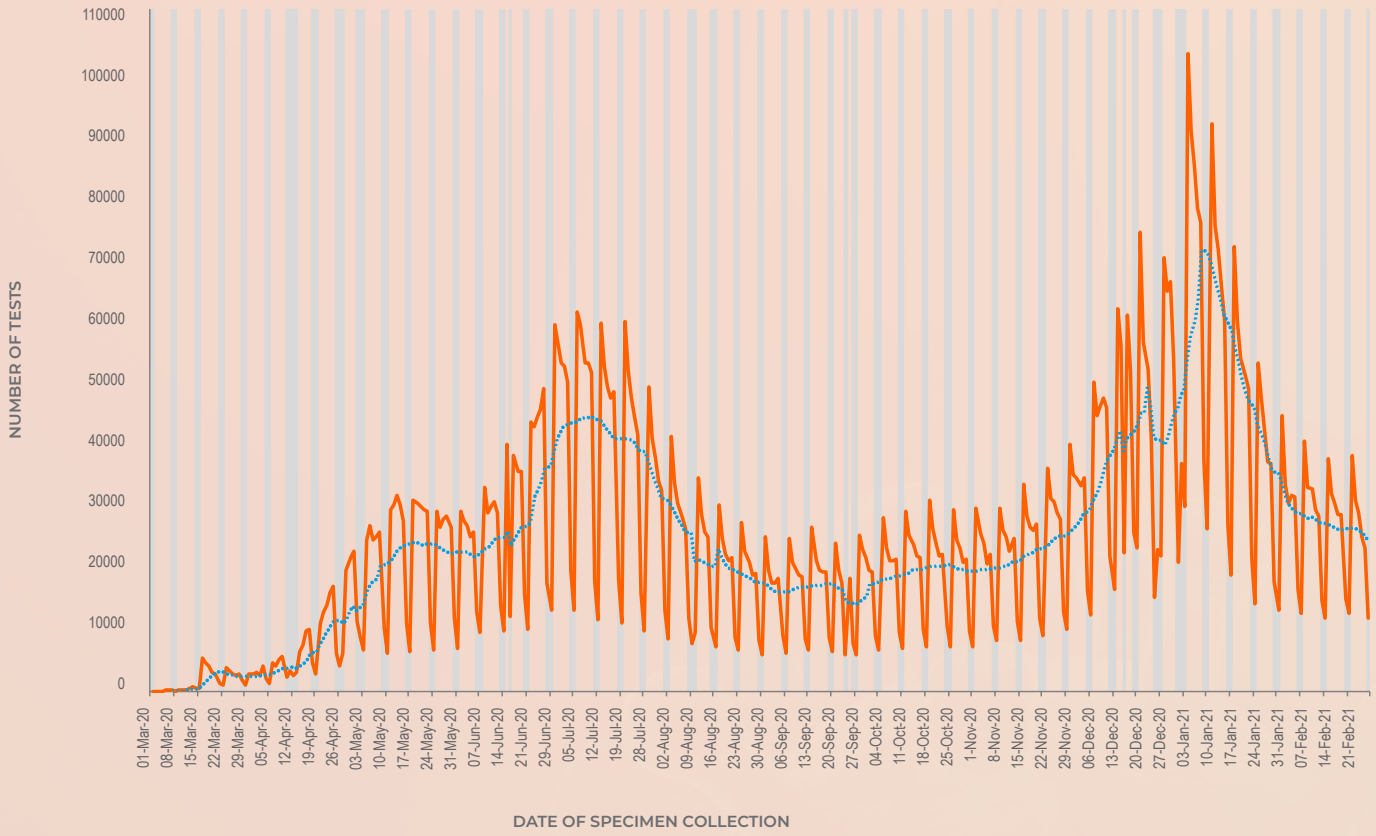

Figure 1. Number of laboratory tests conducted by date of specimen collection, South Africa, 1 March 2020 – 27 February 2021. Blue dotted line shows the 7-day moving average of the number of tests conducted. Grey bars highlight weekend days and public holidays.

The overall percentage testing positive from week 10 of 2020 through week 8 of 2021 was 17.7% (Table 1). During the first wave of infections, the percentage testing positive peaked at 29.7% in week 29 of 2020, and subsequently decreased to 8.4% in week 44 of 2020. During the second wave of infections the percentage testing positive started increasing from week 46 of 2020, to a peak of 34.7% in week 53 of 2020. The percentage testing positive in week 8 of 2021 was 5.7%, 0.8% lower than observed in week 7 and the lowest percentage testing positive since the start of the first wave (May 2020) (Figure 2).

Table 1. Weekly number of tests conducted and positive tests, South Africa, 1 March 2020 – 27 February 2021

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
10	01-Mar-20	454 (0.0)	13	2.9
11	08-Mar-20	2380 (0.0)	103	4.3
12	15-Mar-20	21567 (0.2)	897	4.2
13	22-Mar-20	17541 (0.2)	543	3.1
14	29-Mar-20	18245 (0.2)	520	2.9
15	05-Apr-20	26298 (0.3)	796	3.0
16	12-Apr-20	43749 (0.5)	1295	3.0
17	19-Apr-20	79174 (0.9)	2177	2.7
18	26-Apr-20	93810 (1.0)	3205	3.4
19	03-May-20	142703 (1.6)	6017	4.2
20	10-May-20	165370 (1.8)	8091	4.9
21	17-May-20	166541 (1.8)	11379	6.8
22	24-May-20	156135 (1.7)	12967	8.3
23	31-May-20	153565 (1.7)	15079	9.8
24	07-Jun-20	173892 (1.9)	22359	12.9
25	14-Jun-20	186074 (2.1)	32649	17.5
26	21-Jun-20	252084 (2.8)	55044	21.8
27	28-Jun-20	302696 (3.4)	75307	24.9
28	05-Jul-20	307902 (3.4)	86032	27.9
29	12-Jul-20	285589 (3.2)	84925	29.7
30	19-Jul-20	270881 (3.0)	78634	29.0
31	26-Jul-20	216377 (2.4)	58393	27.0
32	02-Aug-20	179562 (2.0)	40993	22.8
33	09-Aug-20	141101 (1.6)	26265	18.6
34	16-Aug-20	135007 (1.5)	21377	15.8
35	23-Aug-20	123327 (1.4)	16330	13.2
36	30-Aug-20	112757 (1.3)	12790	11.3
37	06-Sep-20	116992 (1.3)	11952	10.2
38	13-Sep-20	120710 (1.3)	12011	10.0
39	20-Sep-20	98815 (1.1)	10098	10.2
40	27-Sep-20	123056 (1.4)	11008	8.9
41	04-Oct-20	131037 (1.5)	11777	9.0
42	11-Oct-20	137958 (1.5)	12076	8.8
43	18-Oct-20	142156 (1.6)	12066	8.5
44	25-Oct-20	135837 (1.5)	11478	8.4
45	01-Nov-20	138803 (1.5)	12133	8.7
46	08-Nov-20	146983 (1.6)	14841	10.1
47	15-Nov-20	160622 (1.8)	18761	11.7
48	22-Nov-20	175672 (1.9)	22049	12.6
49	29-Nov-20	203022 (2.3)	30764	15.2
50	06-Dec-20	267370 (3.0)	53302	19.9
51	13-Dec-20	293760 (3.3)	68554	23.3
52	20-Dec-20	283733 (3.1)	81920	28.9
53	27-Dec-20	333250 (3.7)	115638	34.7
1	03-Jan-21	498044 (5.5)	150622	30.2
2	10-Jan-21	415247 (4.6)	104493	25.2
3	17-Jan-21	324894 (3.6)	63074	19.4
4	24-Jan-21	247522 (2.7)	34489	13.9
5	31-Jan-21	200488 (2.2)	22220	11.1
6	07-Feb-21	190193 (2.1)	16364	8.6
7	14-Feb-21	183188 (2.0)	12028	6.6
8	21-Feb-21	169734 (1.9)	9732	5.7
	Total	**9013867 (100.0)**	**1597630**	**17.7**

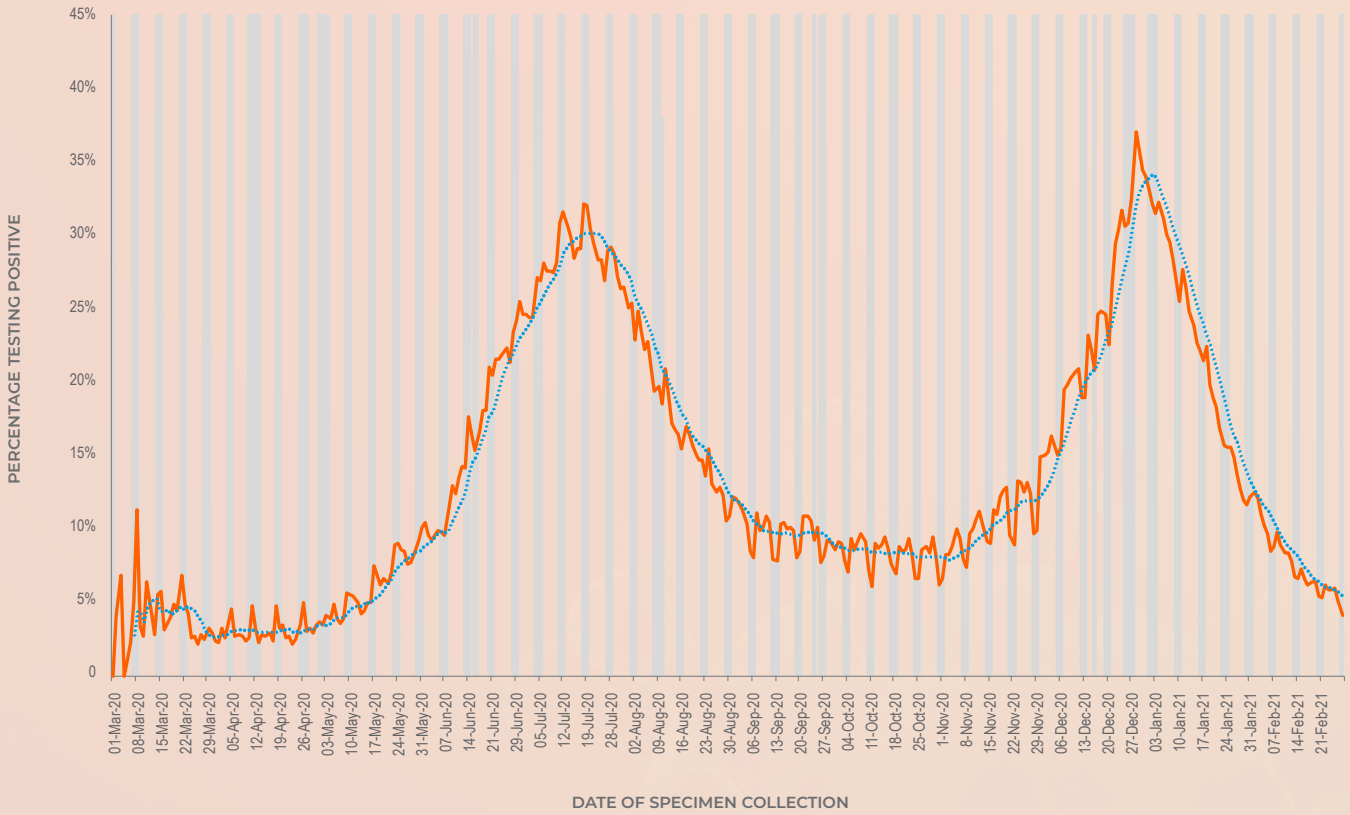

Figure 2. Percentage of laboratory tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March 2020 – 27 February 2021. Blue dotted line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

Testing in private and public sectors

From 1 March 2020 through 27 February 2021, 3,925,697 laboratory tests were conducted in public sector laboratories, with 18.7% testing positive. Over this same period, private sector laboratories conducted 5,088,170 tests, with 17.2% testing positive (Table 2). Overall the public sector has conducted 43.6% of tests and accounted for 45.2% of positive tests. In the first wave of infections the peak percentage testing positive was observed in week 30 of 2020 in the public sector (28.8%), and in week 29 of 2020 in the private sector (30.6%). In the second wave of infections the highest percentage testing positive was observed in week 53 of 2020 in both the public sector (35.1%) and private sector (34.4%). From week 7 to week 8 of 2021, the percentage testing positive decreased by 0.9% in the public sector (8.0% to 7.1%, P<0.001), and decreased by 0.7% (5.4% to 4.7%, P<0.001) in the private sector. In week 8 of 2021 the percentage testing positive was higher in the public sector (7.1%) compared to the private sector (4.7%) (P<0.001).

The mean turnaround time for PCR tests performed in week 8 of 2021 was 1.1 days; 1.4 days in the public sector and 0.9 days in the private sector (Figure 3). Turnaround times for public sector tests were ≤2 days in all provinces in week 8 (Figure 4). Twenty-six of the 28 (92.9%) NHLS laboratories performing PCR testing for SARS-CoV-2 had turnaround times ≤2 days in week 8 (Figure 5).

Table 2. Weekly number of tests conducted and positive tests, by healthcare sector, South Africa, 1 March 2020 – 27 February 2021

		Public sector		Private sector		Public sector percentage of		Ratio
Week number	Week beginning	Tests	Cases n (%)	Tests	Positive tests n (%)	Tests (%)	Positive tests (%)	of PTP[a]
10	01-Mar-20	293	10 (3.4)	161	3 (1.9)	64.5	76.9	1.832
11	08-Mar-20	401	27 (6.7)	1979	76 (3.8)	16.8	26.2	1.753
12	15-Mar-20	1442	81 (5.6)	20125	816 (4.1)	6.7	9.0	1.385
13	22-Mar-20	3477	149 (4.3)	14064	394 (2.8)	19.8	27.4	1.530
14	29-Mar-20	5868	194 (3.3)	12377	326 (2.6)	32.2	37.3	1.255
15	05-Apr-20	11735	417 (3.6)	14563	379 (2.6)	44.6	52.4	1.365
16	12-Apr-20	24167	672 (2.8)	19582	623 (3.2)	55.2	51.9	0.874
17	19-Apr-20	55110	1595 (2.9)	24064	582 (2.4)	69.6	73.3	1.197
18	26-Apr-20	67469	2453 (3.6)	26341	752 (2.9)	71.9	76.5	1.274
19	03-May-20	94336	4506 (4.8)	48367	1511 (3.1)	66.1	74.9	1.529
20	10-May-20	107997	5443 (5.0)	57373	2648 (4.6)	65.3	67.3	1.092
21	17-May-20	98647	7031 (7.1)	67894	4348 (6.4)	59.2	61.8	1.113
22	24-May-20	77596	6411 (8.3)	78539	6556 (8.3)	49.7	49.4	0.990
23	31-May-20	63943	6626 (10.4)	89622	8453 (9.4)	41.6	43.9	1.099
24	07-Jun-20	64653	8038 (12.4)	109239	14321 (13.1)	37.2	35.9	0.948
25	14-Jun-20	61147	11982 (19.6)	124927	20667 (16.5)	32.9	36.7	1.184
26	21-Jun-20	90452	20425 (22.6)	161632	34619 (21.4)	35.9	37.1	1.054
27	28-Jun-20	106366	27244 (25.6)	196330	48063 (24.5)	35.1	36.2	1.046
28	05-Jul-20	117723	32238 (27.4)	190179	53794 (28.3)	38.2	37.5	0.968
29	12-Jul-20	110659	31383 (28.4)	174930	53542 (30.6)	38.7	37.0	0.927
30	19-Jul-20	105206	30319 (28.8)	165675	48315 (29.2)	38.8	38.6	0.988
31	26-Jul-20	81234	22782 (28.0)	135143	35611 (26.4)	37.5	39.0	1.064
32	02-Aug-20	70566	16996 (24.1)	108996	23997 (22.0)	39.3	41.5	1.094
33	09-Aug-20	58660	11172 (19.0)	82441	15093 (18.3)	41.6	42.5	1.040
34	16-Aug-20	56136	9621 (17.1)	78871	11756 (14.9)	41.6	45.0	1.150
35	23-Aug-20	50317	7790 (15.5)	73010	8540 (11.7)	40.8	47.7	1.324
36	30-Aug-20	45419	6096 (13.4)	67338	6694 (9.9)	40.3	47.7	1.350
37	06-Sep-20	51054	6421 (12.6)	65938	5531 (8.4)	43.6	53.7	1.499
38	13-Sep-20	53705	6547 (12.2)	67005	5464 (8.2)	44.5	54.5	1.495
39	20-Sep-20	44840	5530 (12.3)	53975	4568 (8.5)	45.4	54.8	1.457
40	27-Sep-20	48627	5568 (11.5)	74429	5440 (7.3)	39.5	50.6	1.567
41	04-Oct-20	50430	5688 (11.3)	80607	6089 (7.6)	38.5	48.3	1.493
42	11-Oct-20	53445	5702 (10.7)	84513	6374 (7.5)	38.7	47.2	1.415
43	18-Oct-20	56120	6044 (10.8)	86036	6022 (7.0)	39.5	50.1	1.539
44	25-Oct-20	51281	5721 (11.2)	84556	5757 (6.8)	37.8	49.8	1.639
45	01-Nov-20	52988	6061 (11.4)	85815	6072 (7.1)	38.2	50.0	1.617
46	08-Nov-20	58907	8097 (13.7)	88076	6744 (7.7)	40.1	54.6	1.795
47	15-Nov-20	67573	10584 (15.7)	93049	8177 (8.8)	42.1	56.4	1.782
48	22-Nov-20	74569	12199 (16.4)	101103	9850 (9.7)	42.4	55.3	1.679
49	29-Nov-20	81165	15730 (19.4)	121857	15034 (12.3)	40.0	51.1	1.571
50	06-Dec-20	107387	24709 (23.0)	159983	28593 (17.9)	40.2	46.4	1.287
51	13-Dec-20	116555	29801 (25.6)	177205	38753 (21.9)	39.7	43.5	1.169
52	20-Dec-20	109279	34118 (31.2)	174454	47802 (27.4)	38.5	41.6	1.139
53	27-Dec-20	150615	52872 (35.1)	182635	62766 (34.4)	45.2	45.7	1.021
1	03-Jan-21	234239	70741 (30.2)	263805	79881 (30.3)	47.0	47.0	0.997
2	10-Jan-21	202093	52820 (26.1)	213154	51673 (24.2)	48.7	50.5	1.078
3	17-Jan-21	164377	34393 (20.9)	160517	28681 (17.9)	50.6	54.5	1.171
4	24-Jan-21	122282	18948 (15.5)	125240	15541 (12.4)	49.4	54.9	1.249
5	31-Jan-21	98064	11983 (12.2)	102424	10237 (10.0)	48.9	53.9	1.223
6	07-Feb-21	89481	8437 (9.4)	100712	7927 (7.9)	47.0	51.6	1.198
7	14-Feb-21	82268	6544 (8.0)	100920	5484 (5.4)	44.9	54.4	1.464
8	21-Feb-21	73334	5220 (7.1)	96400	4512 (4.7)	43.2	53.6	1.521
	Total	**3925697**	**722179 (18.4)**	**5088170**	**875451 (17.2)**	**43.6**	**45.2**	**1.069**

[a]Ratio of percentage testing positive (PTP) in the public sector to the private sector calculated as (no. of cases/total tests in public sector)/ (no. of cases/total tests in private sector)

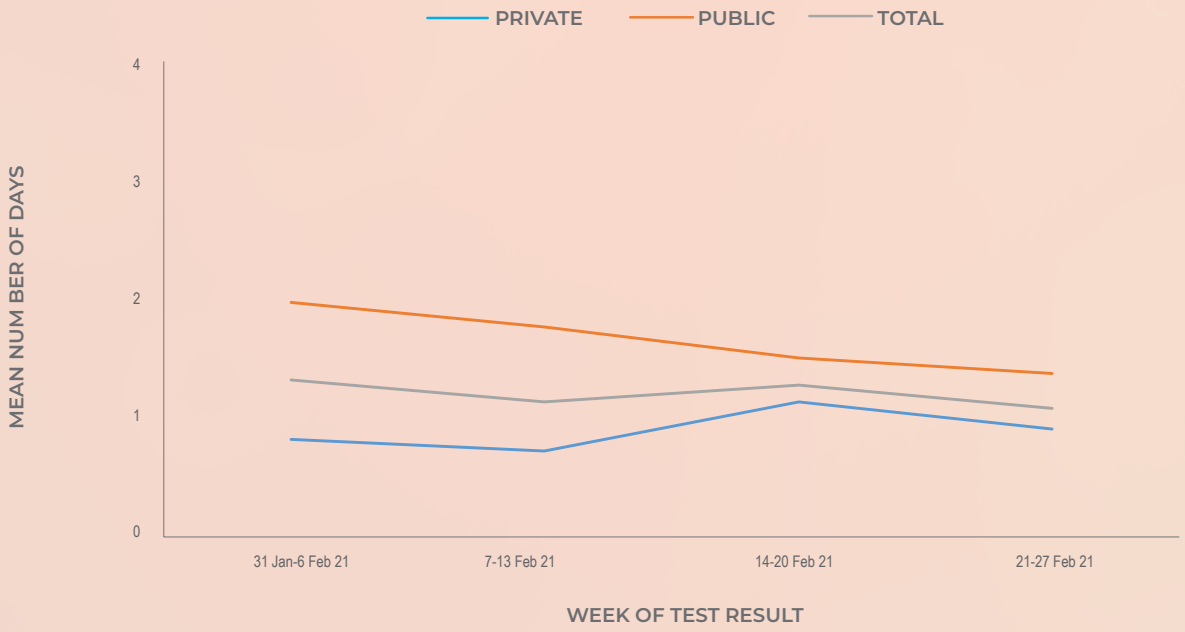

Figure 3. Mean number of days between date of specimen collection and date of test result, by week of test result, South Africa, 31 January – 27 February 2021

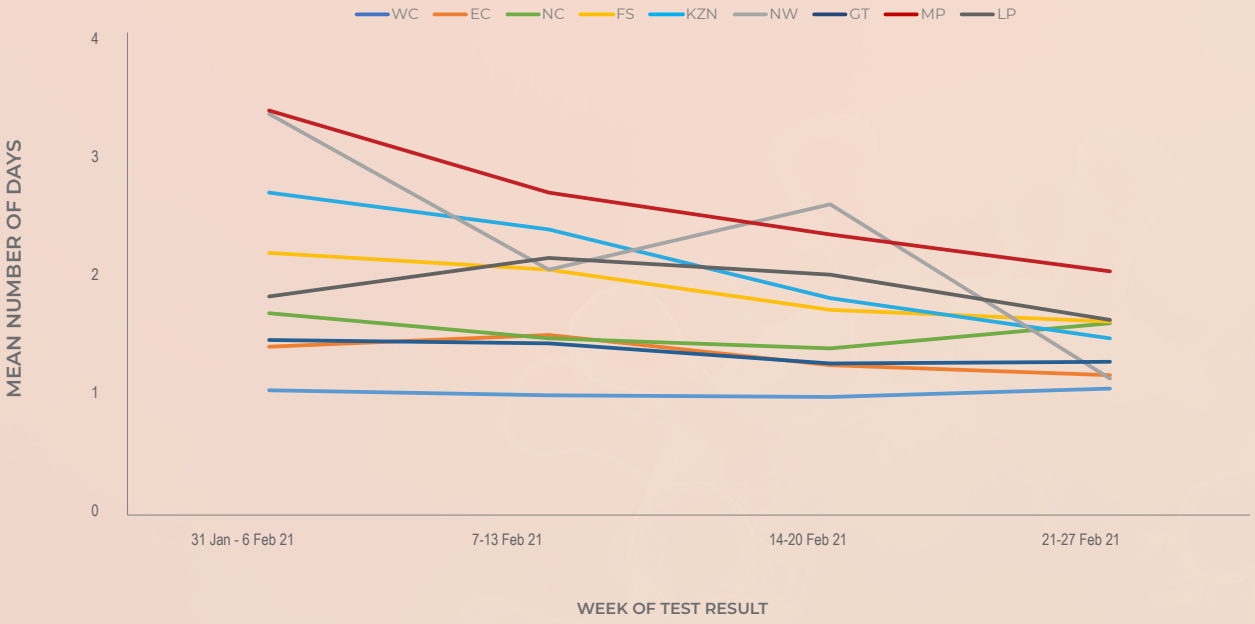

Figure 4. Mean number of days between date of specimen collection and date of test result, by week of test result and province, public sector, South Africa, 31 January – 27 February 2021. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GT, Gauteng; NC, Northern Cape; NW, North West; MP, Mpumalanga; LP, Limpopo

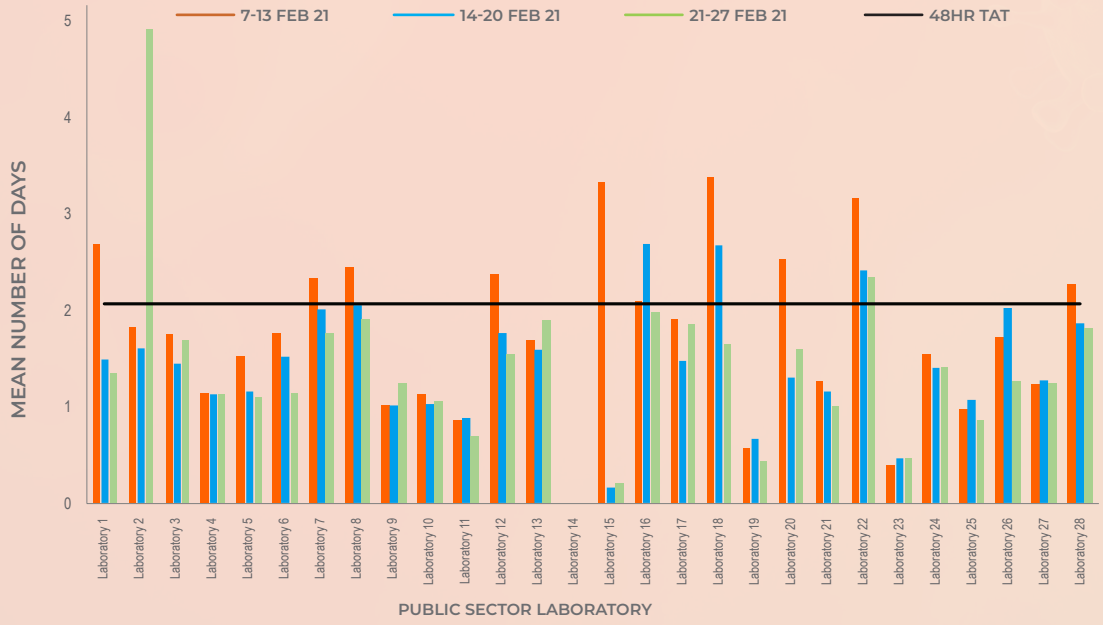

Figure 5. Mean number of days between date of specimen collection and date of test result, by public sector laboratory, 7 – 27 February 2021. The horizontal black line indicates 48-hour turnaround time (TAT).

Testing by province

The majority of tests continued to be performed in Gauteng (34.2%), KwaZulu-Natal (21.6%) and Western Cape (16.9%) provinces in week 8 of 2021 (Table 3). The overall testing rate in week 8 was 285 per 100,000 persons; ranging from 409 per 100,000 persons in the Western Cape to 81 per 100,000 persons in Limpopo (Figure 6). Testing rates have decreased in all provinces since week 1 of 2021, but have remained relatively consistent since week 4 of 2021.

The percentage testing positive in week 8 of 2021 was highest in the Northern Cape (10.6%), and Mpumalanga (9.7%) provinces (Figure 7 and Table 3). The percentage testing positive was 5-9% in the Western Cape, Free State, KwaZulu-Natal, North West and Limpopo, and was <5% in the Eastern Cape and Gauteng in week 8. Compared to the previous week, the percentage testing positive decreased (P<0.001) in week 8 in the Western Cape, Eastern Cape, Gauteng and Limpopo, and remained unchanged in the Northern Cape (P=0.167), Free State (P=0.973), KwaZulu-Natal (P=0.651), North West (P=0.442) and Mpumalanga (P=0.214). The percentage testing positive was higher than the national average, not weighted for population size, in the Northern Cape, Free State, North West, Mpumalanga and Limpopo (Figure 7).

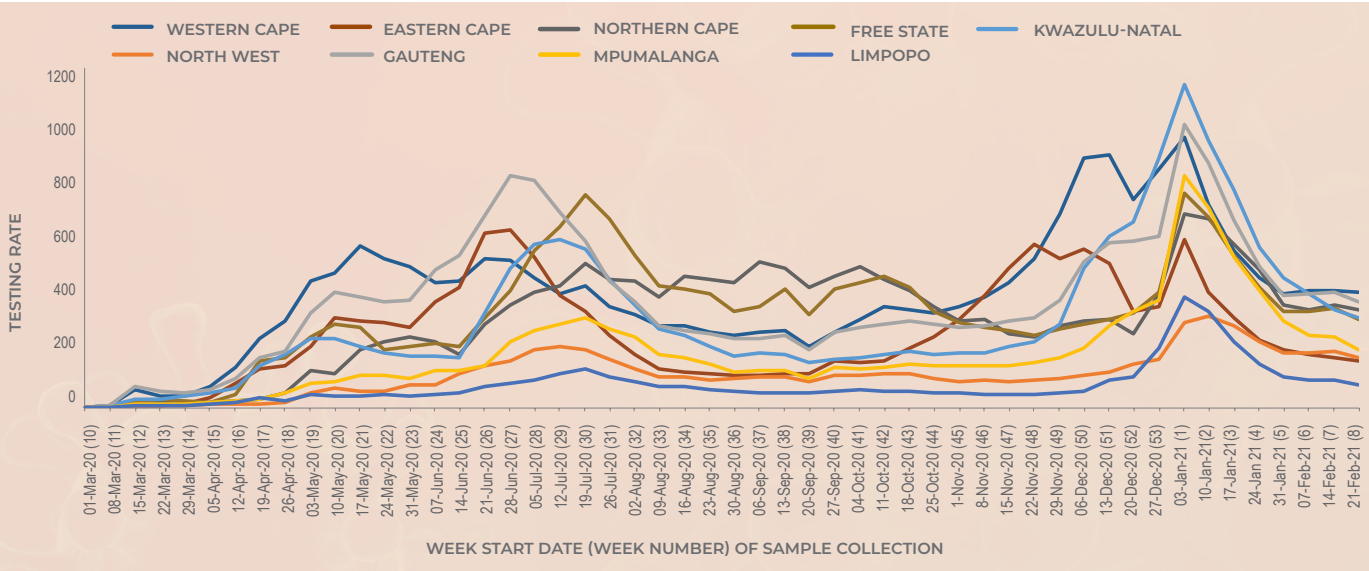

Figure 6. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 March 2020 – 27 February 2021

Table 3. Weekly number of tests performed and positive tests, by province, South Africa, 7 – 27 February 2021

		7 - 13 Feb 21		14 - 20 Feb 21		21 - 27 Feb 21			
Province	**Population[a]**	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**	**Tests per 100,000 persons**	**Change in percentage positive[b]**
Western Cape	7005741	28821	2286 (7.9)	28739	1860 (6.5)	28676	1552 (5.4)	409	-1.1%
Eastern Cape	6734001	12712	560 (4.4)	11937	328 (2.7)	11222	228 (2.0)	167	-0.7%
Northern Cape	1292786	4484	540 (12.0)	4676	536 (11.5)	4424	467 (10.6)	342	-0.9%
Free State	2928903	9993	959 (9.6)	10178	786 (7.7)	9088	703 (7.7)	310	0.0%
KwaZulu-Natal	11531628	46480	3554 (7.6)	39592	2261 (5.7)	36646	2065 (5.6)	318	-0.1%
North West	4108816	7945	931 (11.7)	8080	732 (9.1)	7135	621 (8.7)	174	-0.4%
Gauteng	15488137	62207	5034 (8.1)	62583	3766 (6.0)	58010	2805 (4.8)	375	-1.2%
Mpumalanga	4679786	11818	1699 (14.4)	11533	1181 (10.2)	9523	926 (9.7)	203	-0.5%
Limpopo	5852553	5578	800 (14.3)	5541	576 (10.4)	4719	365 (7.7)	81	-2.7%
Unknown		155	1 (0.6)	329	2 (0.6)	291	0 (0.0)		
Total	**59622350**	**190193**	**16364 (8.6)**	**183188**	**12028 (6.6)**	**169734**	**9732 (5.7)**	**285**	**-0.8%**

[a] 2020 Mid-year population Statistics SA

[b] Current week compared to previous week

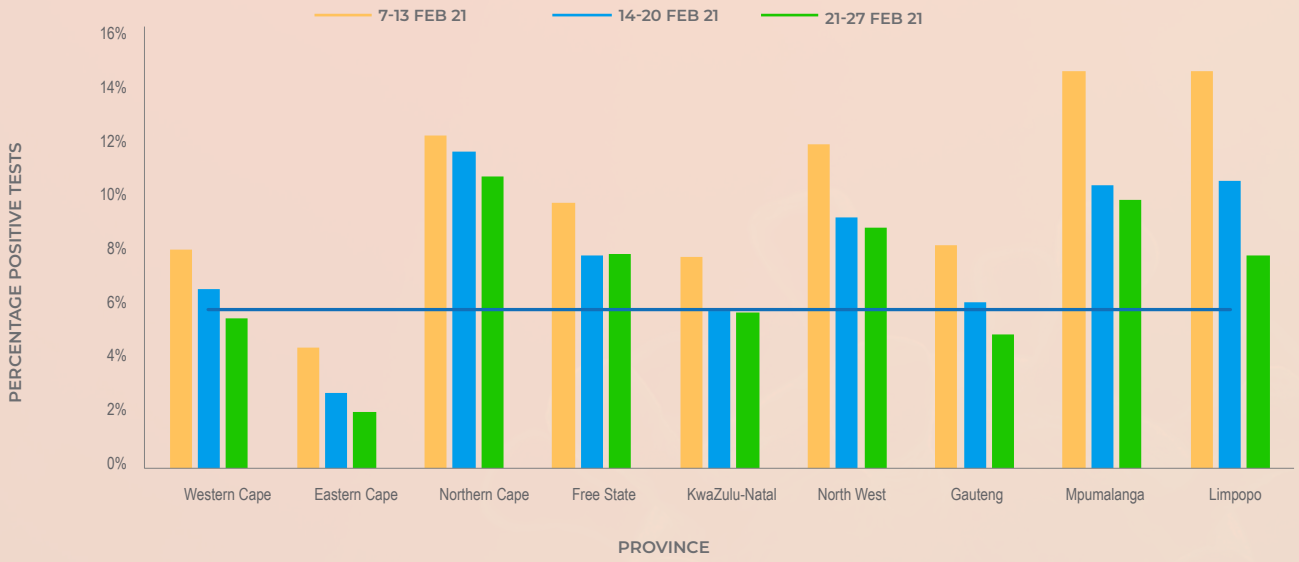

Figure 7. Weekly percentage testing positive, by province, South Africa, 7 – 27 February 2021. The horizontal blue line shows the national mean for week 8, beginning 21 February 2021

Testing in the public sector

In the public sector, the percentage testing positive decreased in the past week (8.0% in week 7 to 7.1% in week 8 of 2021, P<0.001) (Table 4). The percentage testing positive in week 8 of 2021 remained highest in Mpumalanga (12.7%), North West (11.8%) and Northern Cape (11.0%) provinces. The percentage testing positive in the public sector remains higher than the national average, not weighted for population size, in the Northern Cape, Free State, North West, Mpumalanga and Limpopo provinces (Figure 8).

Table 4. Weekly number of tests conducted and positive tests in the public sector, by province, South Africa, 7 – 27 February 2021

	7 - 13 Feb 2021		14 - 20 Feb 2021		21 - 27 Feb 2021	
Province	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**
Western Cape	10404	1032 (9.9)	9716	907 (9.3)	9909	699 (7.1)
Eastern Cape	8389	296 (3.5)	7426	188 (2.5)	6674	117 (1.8)
Northern Cape	2690	371 (13.8)	2886	382 (13.2)	2560	281 (11.0)
Free State	5065	525 (10.4)	4559	434 (9.5)	3972	373 (9.4)
KwaZulu-Natal	32312	2452 (7.6)	26147	1633 (6.2)	23800	1536 (6.5)
North West	3631	496 (13.7)	3553	373 (10.5)	2919	343 (11.8)
Gauteng	19825	2005 (10.1)	20329	1708 (8.4)	18072	1246 (6.9)
Mpumalanga	5168	900 (17.4)	5657	659 (11.6)	3886	495 (12.7)
Limpopo	1870	360 (19.3)	1706	259 (15.2)	1326	130 (9.8)
Unknown	127	0 (0.0)	289	1 (0.3)	216	0 (0.0)
Total	**89481**	**8437 (9.4)**	**82268**	**6544 (8.0)**	**73334**	**5220 (7.1)**

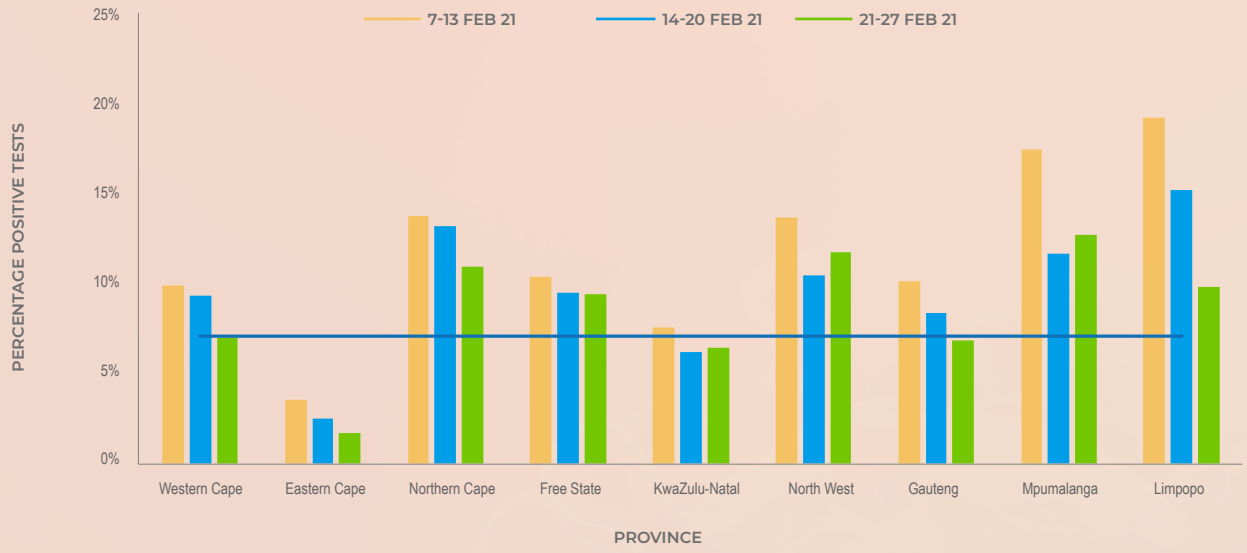

Figure 8. Weekly percentage testing positive in the public sector, by province, South Africa, 7 – 27 February 2021. The horizontal blue line shows the national mean for week 8 of 2021, beginning 21 February 2021.

Facilities with high proportions testing positive

Table 5.1 shows the 25 public sector clinics, hospitals and testing laboratories (where specimens were not tied to a particular facility), that had 25 or more specimens tested and at least five positive results in the week of 21 - 27 February 2021, with the highest proportion testing positive nationally. The distribution of public sector facilities in the table below is spatially diffuse. Six are in Mpumalanga, five each in North West and Northern Cape, and 4 in KwaZulu-Natal.

Table 5.1 Public sector healthcare facilities with a high proportion testing positive, 21 - 27 February 2021

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Northern Cape	30	0.600 (0.425;0.775)
Facility 2	North West	29	0.483 (0.301;0.665)
Facility 3	Mpumalanga	30	0.433 (0.256;0.611)
Facility 4	Northern Cape	204	0.426 (0.359;0.494)
Facility 5	Mpumalanga	40	0.350 (0.202;0.498)
Facility 6	KwaZulu-Natal	43	0.349 (0.206;0.491)
Facility 7	KwaZulu-Natal	61	0.344 (0.225;0.463)
Facility 8	Mpumalanga	32	0.281 (0.125;0.437)
Facility 9	Mpumalanga	29	0.276 (0.113;0.439)
Facility 10	Limpopo	29	0.276 (0.113;0.439)
Facility 11	North West	37	0.270 (0.127;0.413)
Facility 12	Northern Cape	50	0.260 (0.138;0.382)
Facility 13	North West	86	0.256 (0.164;0.348)
Facility 14	Gauteng	86	0.256 (0.164;0.348)
Facility 15	Mpumalanga	32	0.250 (0.100;0.400)
Facility 16	Western Cape	29	0.241 (0.086;0.397)
Facility 17	Northern Cape	25	0.240 (0.073;0.407)
Facility 18	Free State	46	0.239 (0.116;0.362)
Facility 19	Mpumalanga	42	0.238 (0.109;0.367)
Facility 20	Free State	38	0.237 (0.102;0.372)
Facility 21	Northern Cape	47	0.234 (0.113;0.355)
Facility 22	North West	30	0.233 (0.082;0.385)
Facility 23	KwaZulu-Natal	26	0.231 (0.069;0.393)
Facility 24	North West	117	0.222 (0.147;0.298)
Facility 25	KwaZulu-Natal	54	0.222 (0.111;0.333)

95% CI: 95% confidence interval; PTP: positive test proportion

Table 5.2 shows the 25 private sector clinics, hospitals and testing laboratories (where specimens were not tied to a particular facility), that had 25 or more specimens tested and at least five positive results in the week of 21 - 27 February 2021, with the highest proportion testing positive nationally. Private-sector facilities with high proportions testing positive are concentrated in KwaZulu-Natal (5), Mpumalanga and Free State (4 each), and three in each of North West and Limpopo.

Table 5.2 Private sector healthcare facilities with a high proportion testing positive, 21 - 27 February 2021

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Mpumalanga	41	0.244 (0.112;0.375)
Facility 2	Northern Cape	70	0.243 (0.142;0.343)
Facility 3	Free State	51	0.216 (0.103;0.329)
Facility 4	Free State	74	0.203 (0.111;0.294)
Facility 5	Free State	41	0.195 (0.074;0.316)
Facility 6	Western Cape	102	0.186 (0.111;0.262)
Facility 7	Limpopo	194	0.165 (0.113;0.217)
Facility 8	Gauteng	100	0.150 (0.080;0.220)
Facility 9	Free State	77	0.143 (0.065;0.221)
Facility 10	Northern Cape	466	0.139 (0.108;0.171)
Facility 11	Limpopo	158	0.133 (0.080;0.186)
Facility 12	KwaZulu-Natal	38	0.132 (0.024;0.239)
Facility 13	KwaZulu-Natal	152	0.132 (0.078;0.185)
Facility 14	North West	65	0.123 (0.043;0.203)
Facility 15	KwaZulu-Natal	65	0.123 (0.043;0.203)
Facility 16	Limpopo	42	0.119 (0.021;0.217)
Facility 17	North West	51	0.118 (0.029;0.206)
Facility 18	Western Cape	415	0.116 (0.085;0.146)
Facility 19	KwaZulu-Natal	294	0.116 (0.079;0.152)
Facility 20	KwaZulu-Natal	78	0.115 (0.044;0.186)
Facility 21	Mpumalanga	906	0.115 (0.094;0.136)
Facility 22	Gauteng	140	0.114 (0.062;0.167)
Facility 23	Mpumalanga	630	0.113 (0.088;0.137)
Facility 24	Mpumalanga	134	0.112 (0.059;0.165)
Facility 25	North West	136	0.110 (0.058;0.163)

95% CI: 95% confidence interval; PTP: positive test proportion

Health district-level results

The data from geo-locatable public testing (almost every public sector facility in the country) and private testing (approximately 81% of private testing facilities) in the week from 21 - 27 February 2021 have been located within the spatial framework of the health districts and health sub-districts (in the metros). Districts with fewer than 20 tests conducted during the week have been excluded from the analysis. The results, for the 25 municipalities and metropolitan health sub-districts showing the greatest proportions testing positive (PTP) are shown in Table 6.

As proportions testing positive continue to decline, districts showing high PTP are increasingly spatially diffuse. Northern Cape (5), Limpopo, KwaZulu-Natal and Free State (4 each) account for 17 of the 25 districts. Three districts showed a proportion testing positive greater than 30% (Richmond in KwaZulu-Natal, Renosterberg in the Northern Cape, and Umjindi in Mpumalanga).

Table 6. Health sub-districts with the highest proportion testing positive based on public and private sector data for the week of 21 - 27 February 2021

Health district or sub-district	Province	PTP (95% CI)	Previous week
Richmond	KwaZulu-Natal	0.377 (0.318-0.436)	0.162 (0.077-0.246)
Renosterberg	Northern Cape	0.369 (0.232-0.506)	0.118 (0.029-0.206)
Umjindi	Mpumalanga	0.332 (0.207-0.458)	0.153 (0.073-0.233)
Joe Morolong	Northern Cape	0.260 (0.112-0.407)	0.176 (0.080-0.271)
Tswaing	North West	0.254 (0.142-0.367)	0.156 (0.049-0.262)
Maquassi Hills	North West	0.253 (0.148-0.357)	0.173 (0.104-0.243)
Emadlangeni	KwaZulu-Natal	0.216 (0.074-0.358)	0.252 (0.116-0.388)
Richtersveld	Northern Cape	0.211 (0.104-0.317)	0.218 (0.103-0.332)
Dipaleseng	Mpumalanga	0.187 (0.070-0.305)	0.261 (0.122-0.401)
Maluti a Phofung	Free State	0.185 (0.148-0.221)	0.157 (0.124-0.189)
Umzumbe	KwaZulu-Natal	0.173 (0.075-0.271)	0.126 (0.062-0.190)
Bergrivier	Western Cape	0.166 (0.089-0.243)	0.248 (0.178-0.318)
Ga-Segonyana	Northern Cape	0.163 (0.107-0.220)	0.205 (0.153-0.257)
Mafube	Free State	0.150 (0.029-0.272)	0.274 (0.150-0.397)
Ba-Phalaborwa	Limpopo	0.148 (0.097-0.198)	0.149 (0.106-0.192)
Impendle	KwaZulu-Natal	0.146 (0.100-0.192)	0.037 (0.001-0.074)
Bela-Bela	Limpopo	0.144 (0.045-0.244)	0.081 (0.013-0.149)
Thabazimbi	Limpopo	0.143 (0.098-0.188)	0.115 (0.079-0.151)
Mantsopa	Free State	0.141 (0.036-0.246)	0.097 (0.023-0.172)
Ngwathe	Free State	0.141 (0.078-0.204)	0.148 (0.085-0.212)
Makhuduthamaga	Limpopo	0.137 (0.070-0.204)	0.305 (0.212-0.399)
Thaba Chweu	Mpumalanga	0.137 (0.097-0.177)	0.161 (0.120-0.201)
Cape Agulhas	Western Cape	0.136 (0.000-0.279)	...
Matzikama	Western Cape	0.134 (0.082-0.187)	0.153 (0.079-0.228)
Tsantsabane	Northern Cape	0.133 (0.056-0.210)	0.087 (0.029-0.145)

95% CI: 95% confidence interval; PTP: adjusted positive test proportion; Elements marked in red have current week proportions testing positive that are higher than, and CIs that do not overlap with, the previous week proportions and CIs. Elements marked in blue have current week proportions testing positive that are lower than, and CIs that do not overlap with, the previous week proportions and CIs.

The data for every district with a non-zero proportion testing positive or where the range of confidence interval is not more than 30% (15% either side of the point estimate) for the current week is presented graphically below.

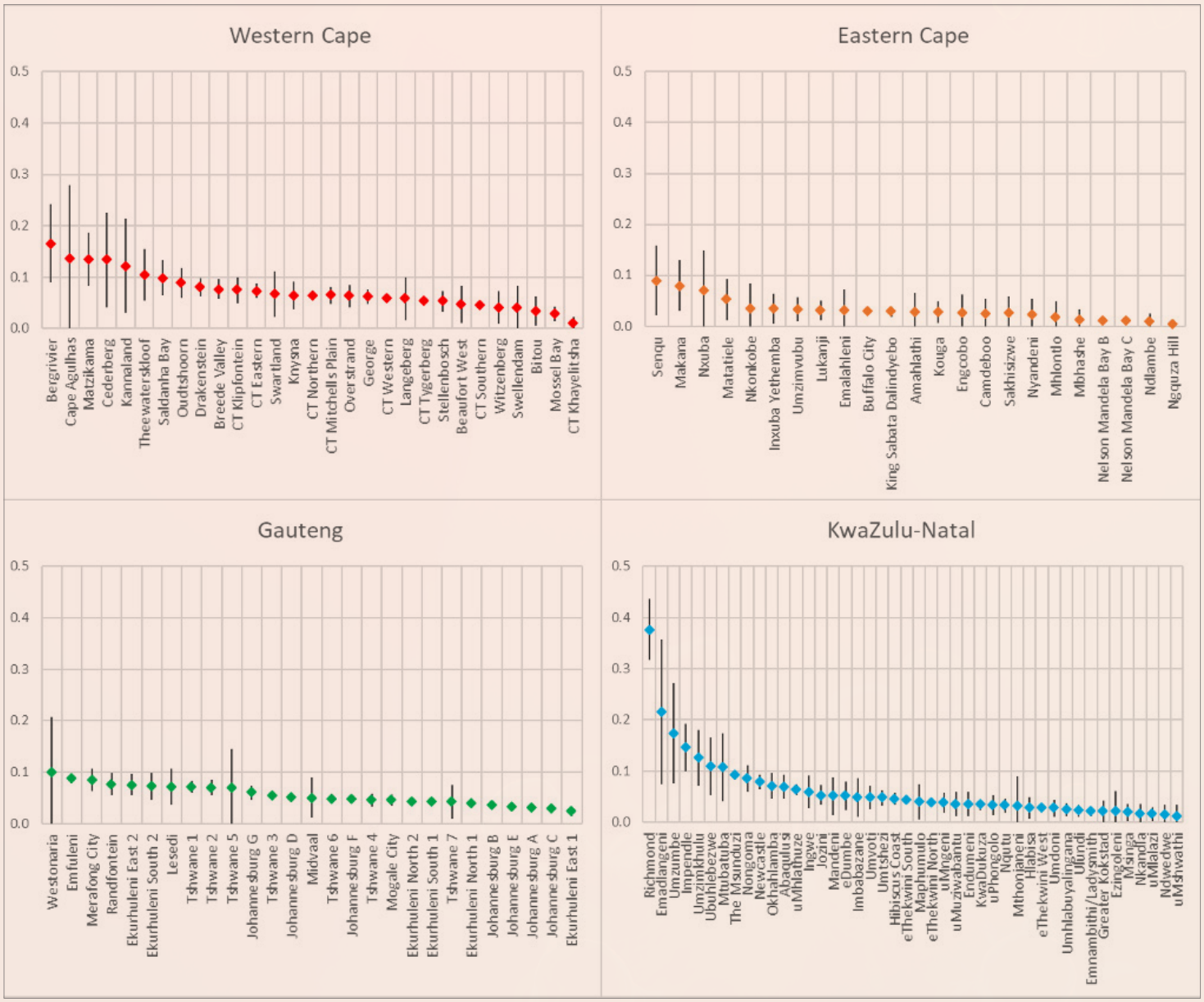

Figure 9.1 Proportions testing positive by health sub-district in the Western Cape, Eastern Cape, Gauteng and KwaZulu-Natal provinces based on public and private sector data for the week of 21 - 27 February 2021.

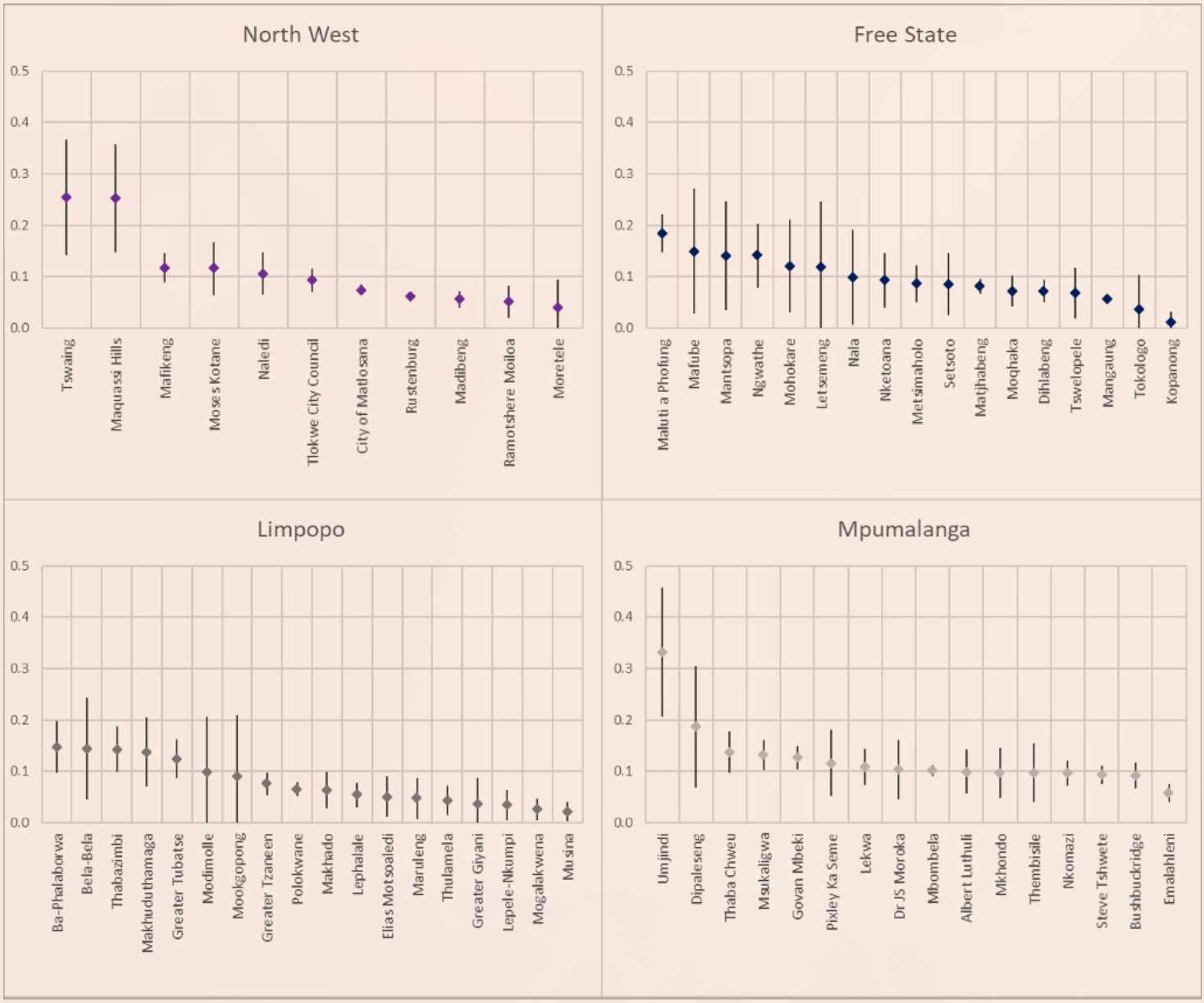

Figure 9.2 Proportions testing positive by health sub-district in the North West, Free State, Limpopo and Mpumalanga provinces based on public and private sector data for the week of 21 - 27 February 2021.

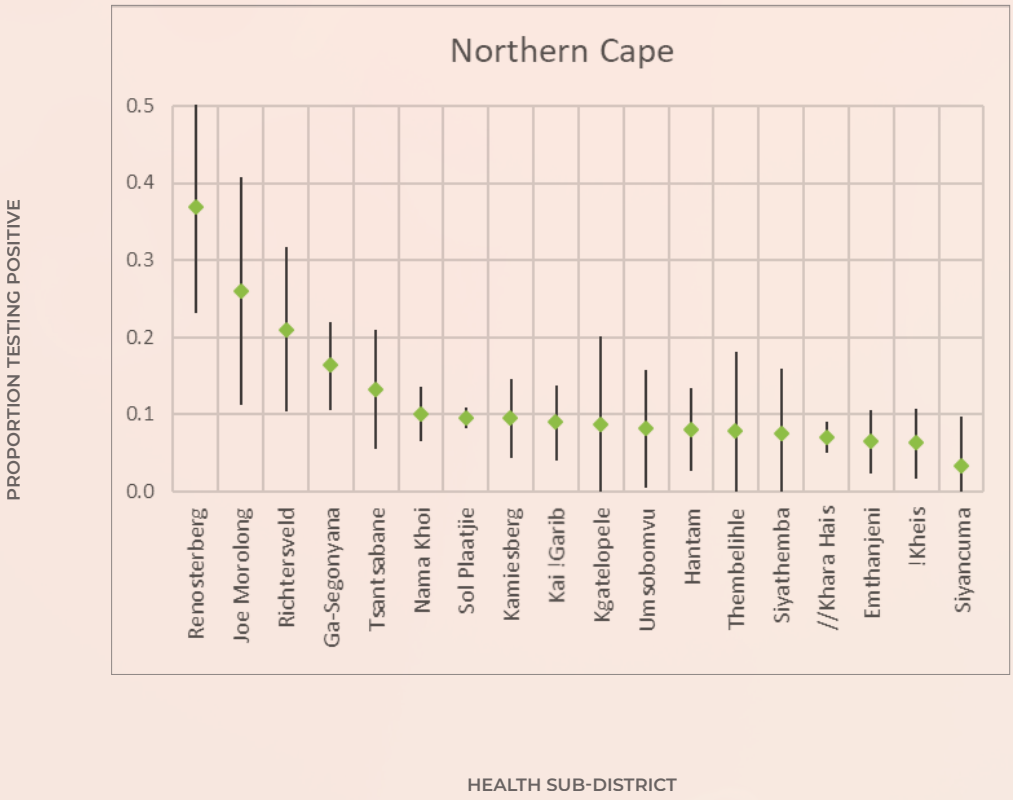

Figure 9.3 Proportions testing positive by health sub-districts in the Northern Cape Province based on public and private sector data for the week of 21 - 27 February 2021.

The spatial pattern of adjusted proportions testing positive, including both public and private sector data, by health district and sub-district are shown for South Africa (Figure 10), Western Cape (Figure 11), Eastern Cape (Figure 12), Northern Cape (Figure 13), Free State (Figure 14), KwaZulu-Natal (Figure 15), North West (Figure 16), Gauteng (Figure 17), Mpumalanga (Figure 18) and Limpopo (Figure 19).

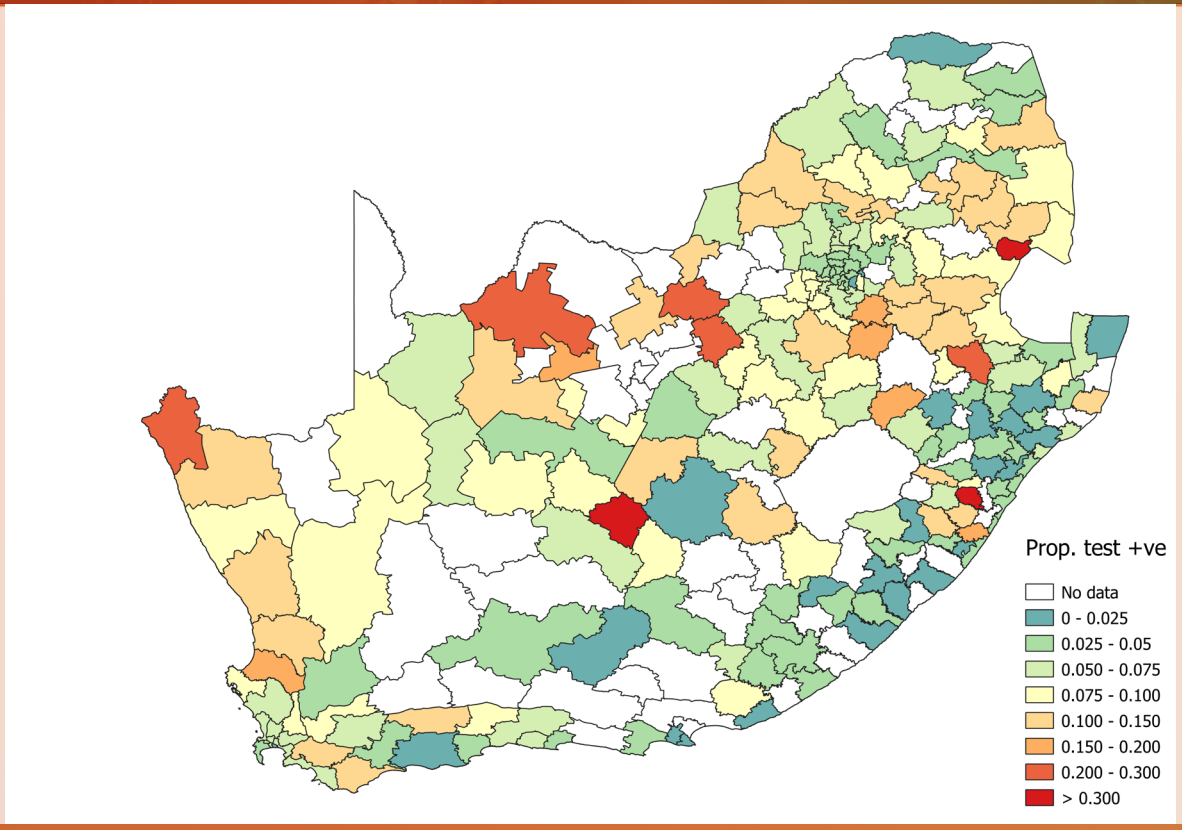

Figure 10. Proportion testing positive by health sub-district in South Africa for the week of 21 - 27 February 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

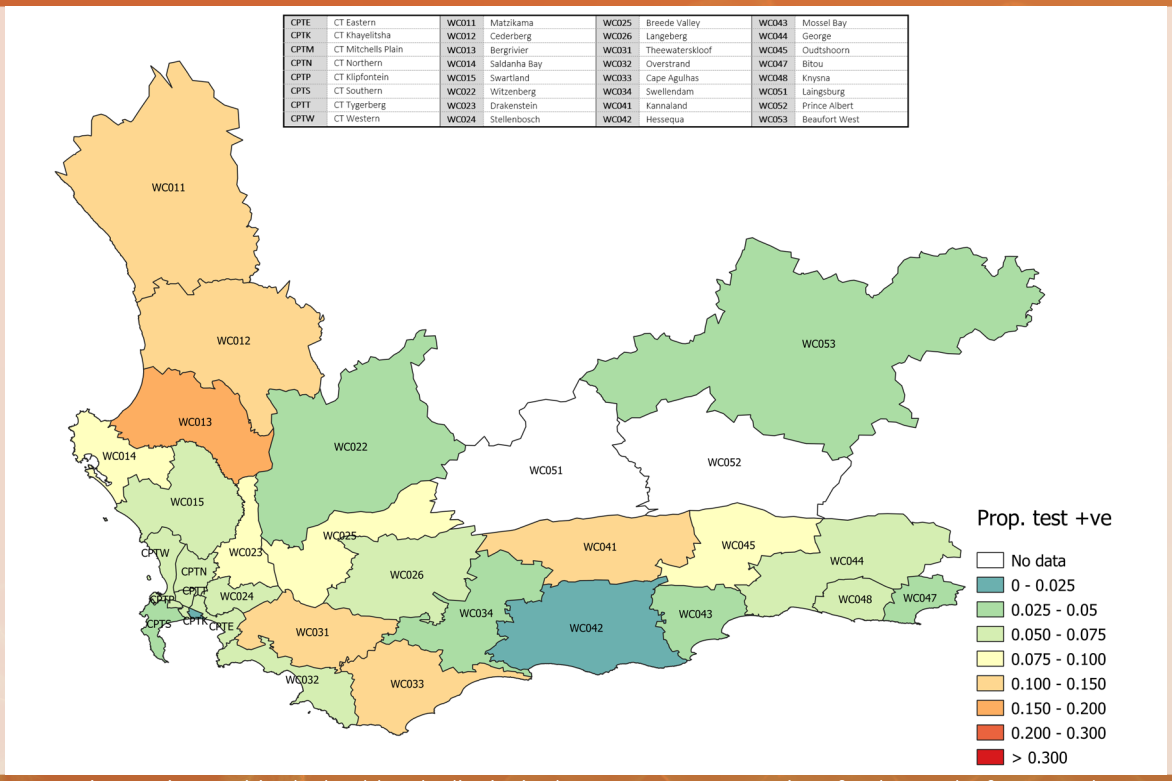

Figure 11. Proportion testing positive by health sub-district in the Western Cape province for the week of 21 - 27 February 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%

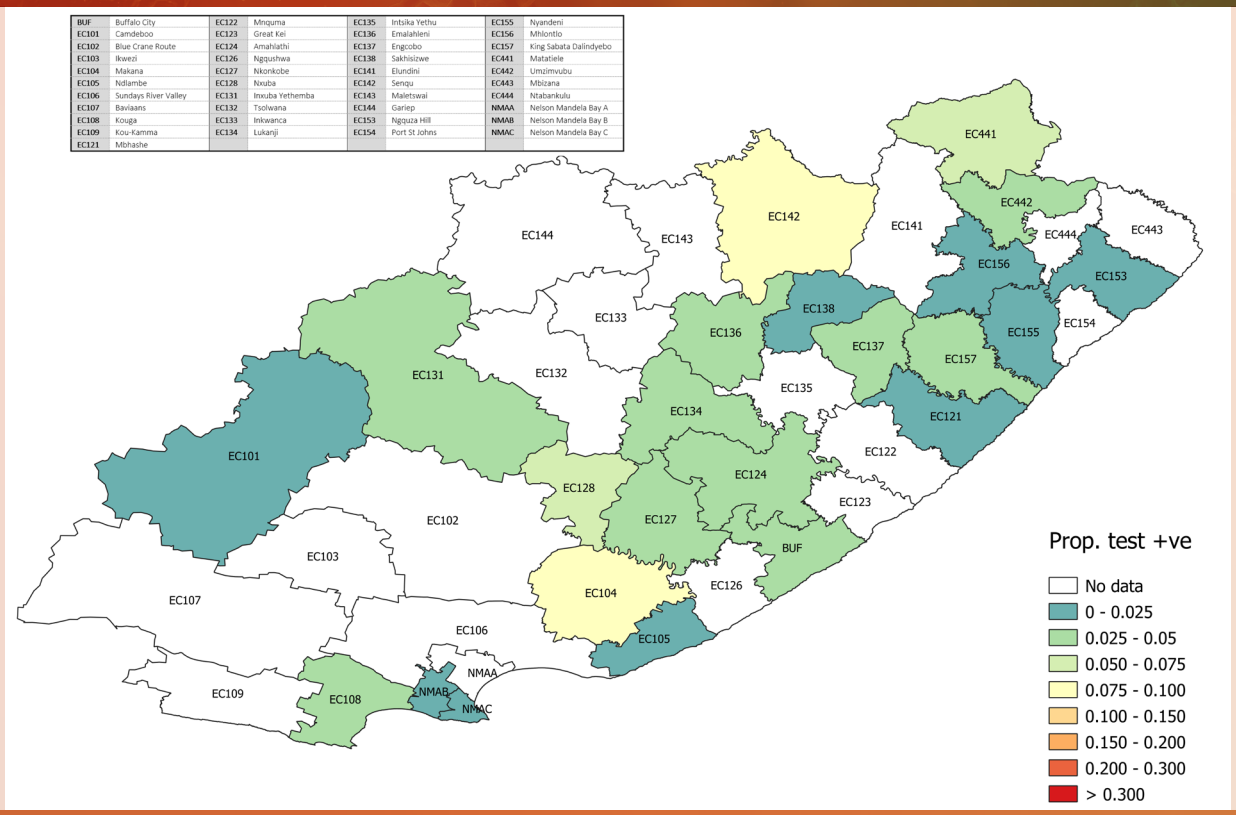

Figure 12. Proportion testing positive by health sub-district in the Eastern Cape province for the week of 21 - 27 February 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

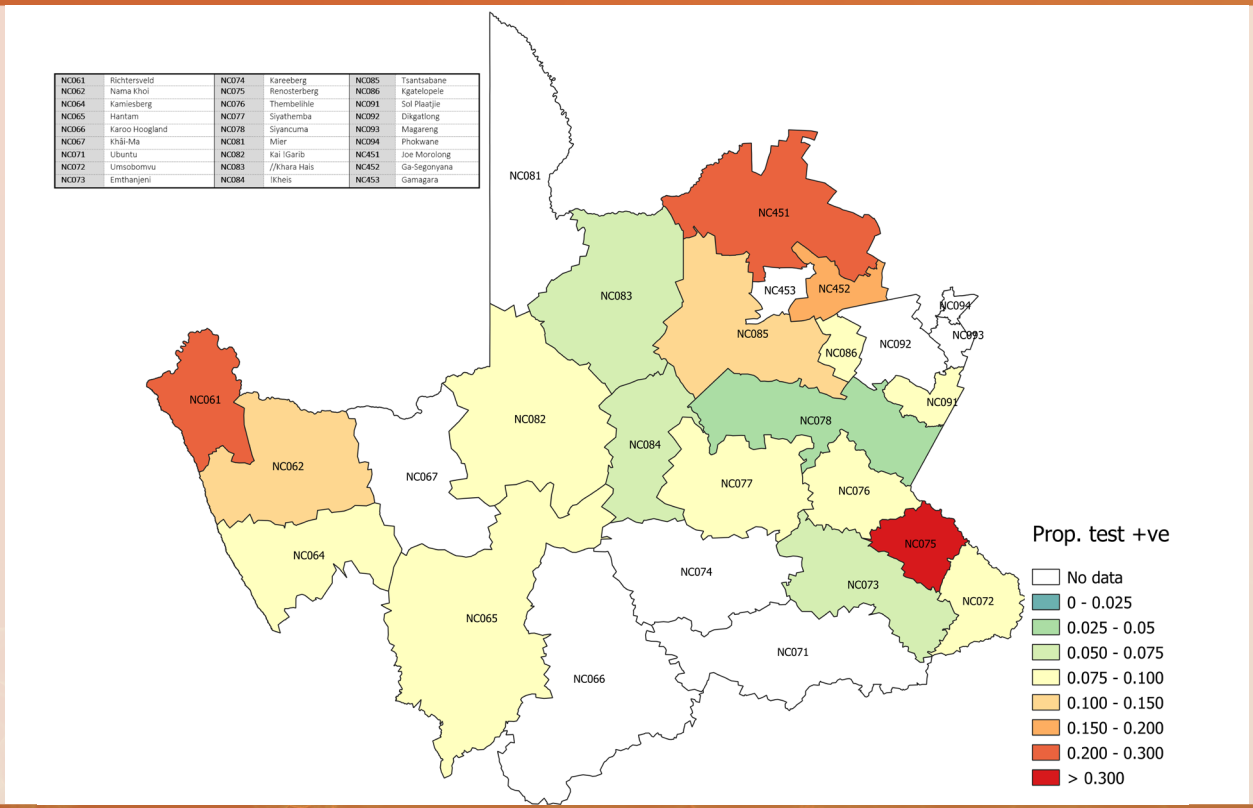

Figure 13. Proportion testing positive by health sub-district in Northern Cape Province for the week of 21 - 27 February 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

MAN	Mangaung	FS181	Masilonyana	FS191	Setsoto	FS196	Mantsopa
FS161	Letsemeng	FS182	Tokologo	FS192	Dihlabeng	FS201	Moqhaka
FS162	Kopanong	FS183	Tswelopele	FS193	Nketoana	FS203	Ngwathe
FS163	Mohokare	FS184	Matjhabeng	FS194	Maluti a Phofung	FS204	Metsimaholo
FS164	Naledi	FS185	Nala	FS195	Phumelela	FS205	Mafube

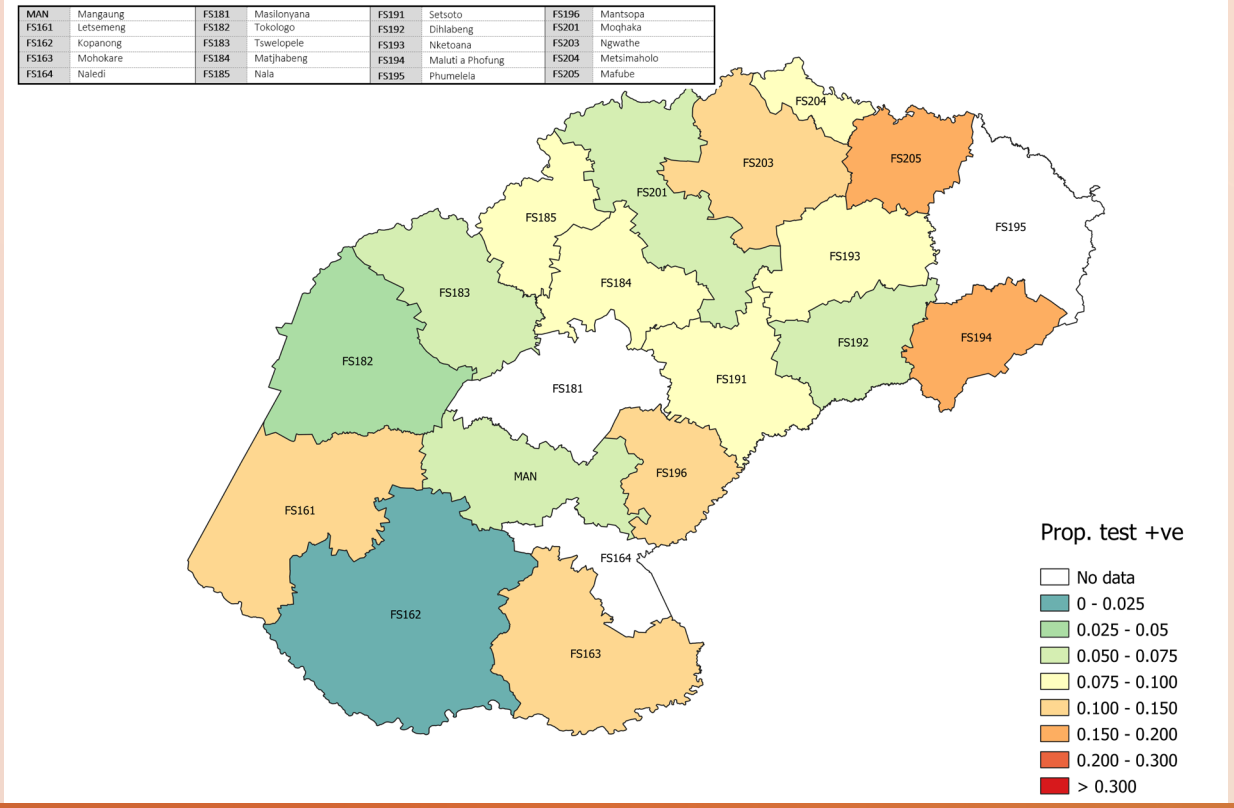

Figure 14. Proportion testing positive by health sub-district in Free State Province for the week of 21 - 27 February 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

ETHN	eThekwini North	KZN233	Indaka	KZN273	The Big 5 False Bay
ETHS	eThekwini South	KZN234	Umtshezi	KZN274	Hlabisa
ETHS	eThekwini South	KZN235	Okhahlamba	KZN275	Mtubatuba
ETHW	eThekwini West	KZN236	Imbabazane	KZN281	Mfolozi
KZN211	Vulamehlo	KZN241	Endumeni	KZN282	uMhlathuze
KZN212	Umdoni	KZN242	Nqutu	KZN283	Ntambanana
KZN213	Umzumbe	KZN244	Msinga	KZN284	uMlalazi
KZN214	uMuziwabantu	KZN245	Umvoti	KZN285	Mthonjaneni
KZN215	Ezingoleni	KZN252	Newcastle	KZN286	Nkandla
KZN216	Hibiscus Coast	KZN253	Emadlangeni	KZN291	Mandeni
KZN221	uMshwathi	KZN254	Dannhauser	KZN292	KwaDukuza
KZN222	uMngeni	KZN261	eDumbe	KZN293	Ndwedwe
KZN223	Mpofana	KZN262	uPhongolo	KZN294	Maphumulo
KZN224	Impendle	KZN263	Abaqulusi	KZN431	Ingwe
KZN225	The Msunduzi	KZN265	Nongoma	KZN432	Kwa Sani
KZN226	Mkhambathini	KZN266	Ulundi	KZN433	Greater Kokstad
KZN227	Richmond	KZN271	Umhlabuyalingana	KZN434	Ubuhlebezwe
KZN232	Emnambithi/Ladysmith	KZN272	Jozini	KZN435	Umzimkhulu

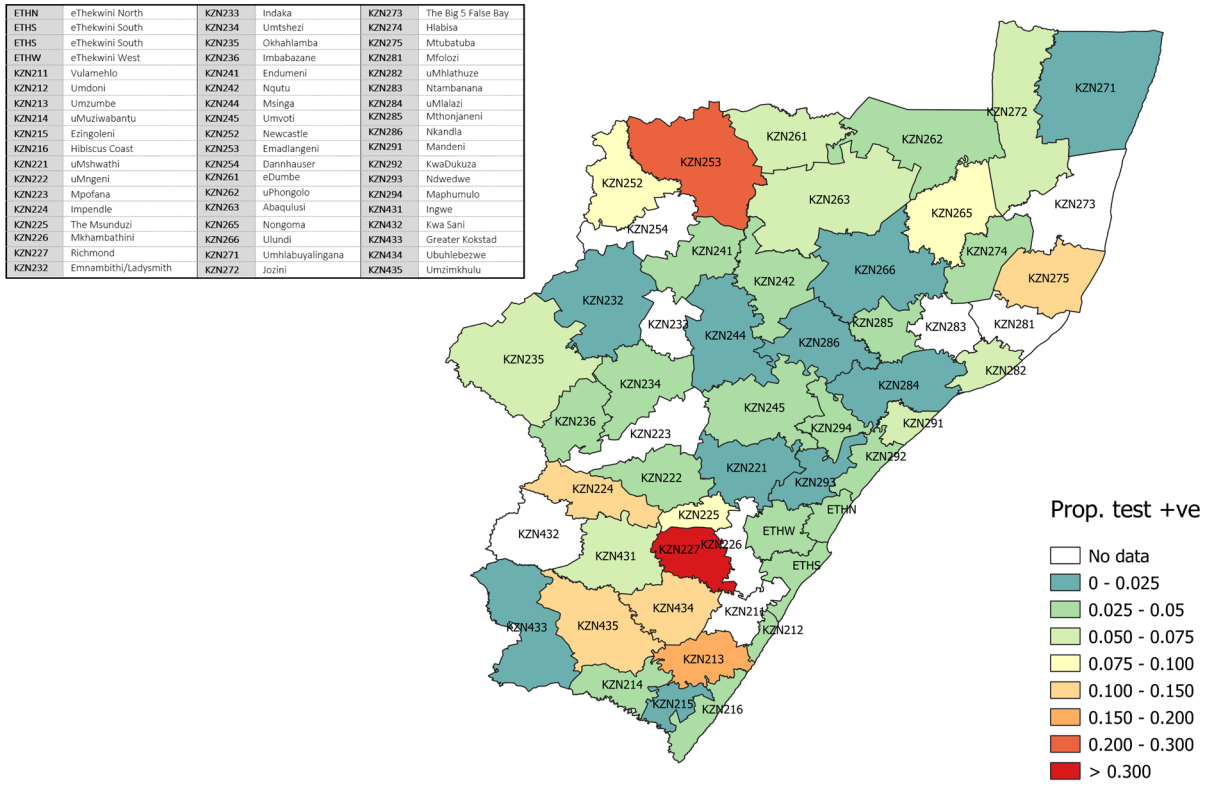

Figure 15. Proportion testing positive by health sub-district in KwaZulu-Natal Province for the week of 21 - 27 February 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

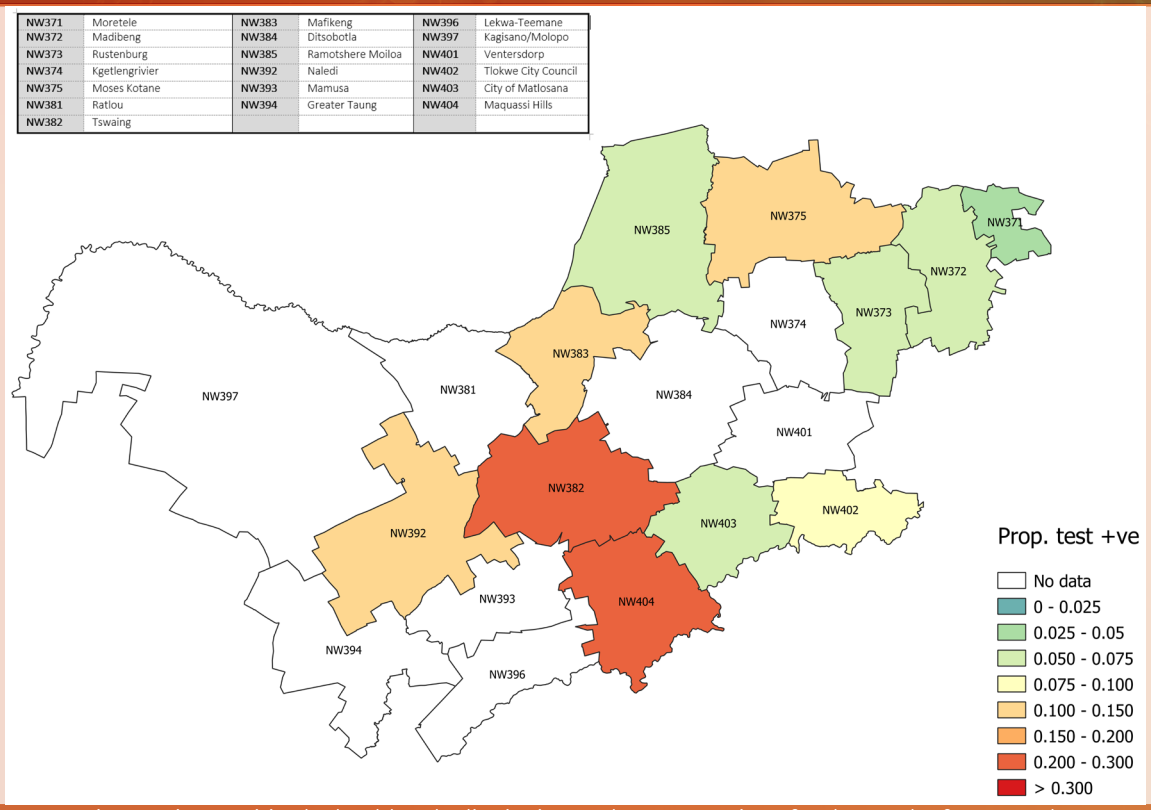

Figure 16. Proportion testing positive by health sub-district in North West Province for the week of 21 - 27 February 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

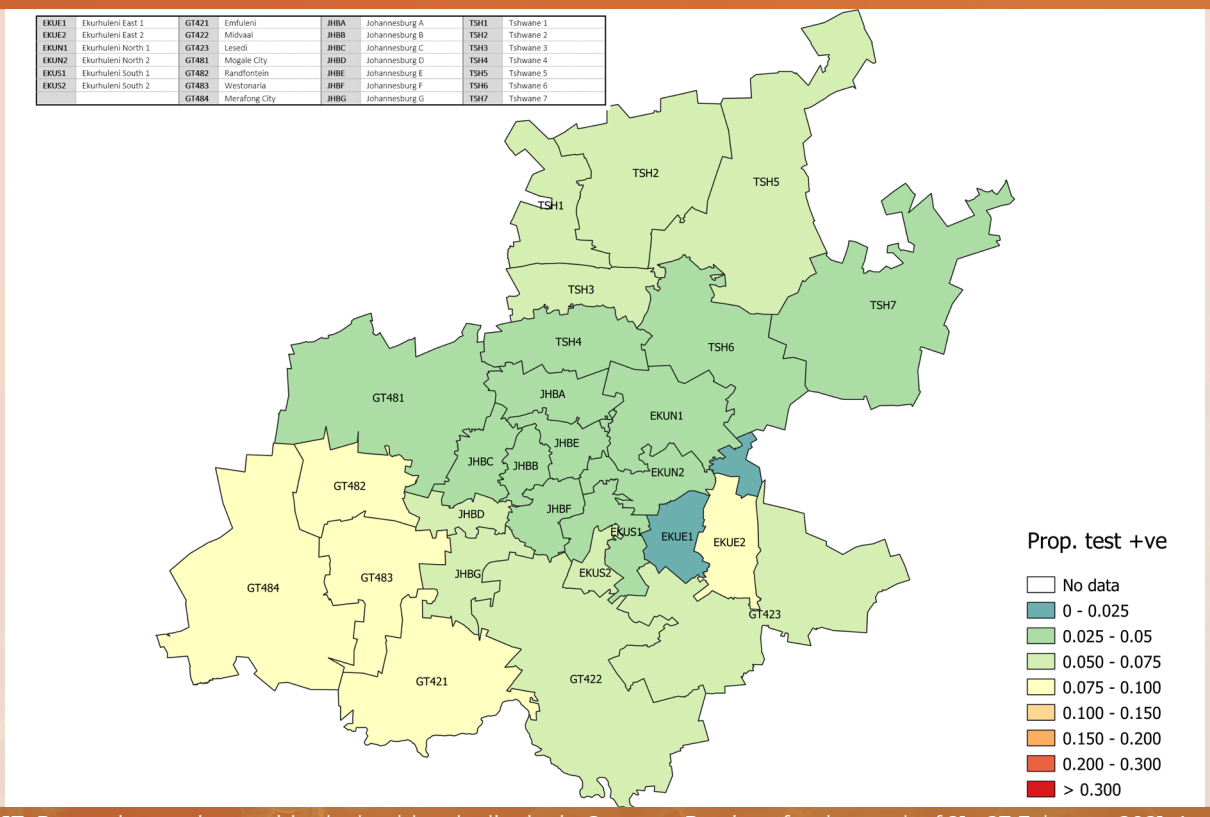

Figure 17. Proportion testing positive by health sub-district in Gauteng Province for the week of 21 - 27 February 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

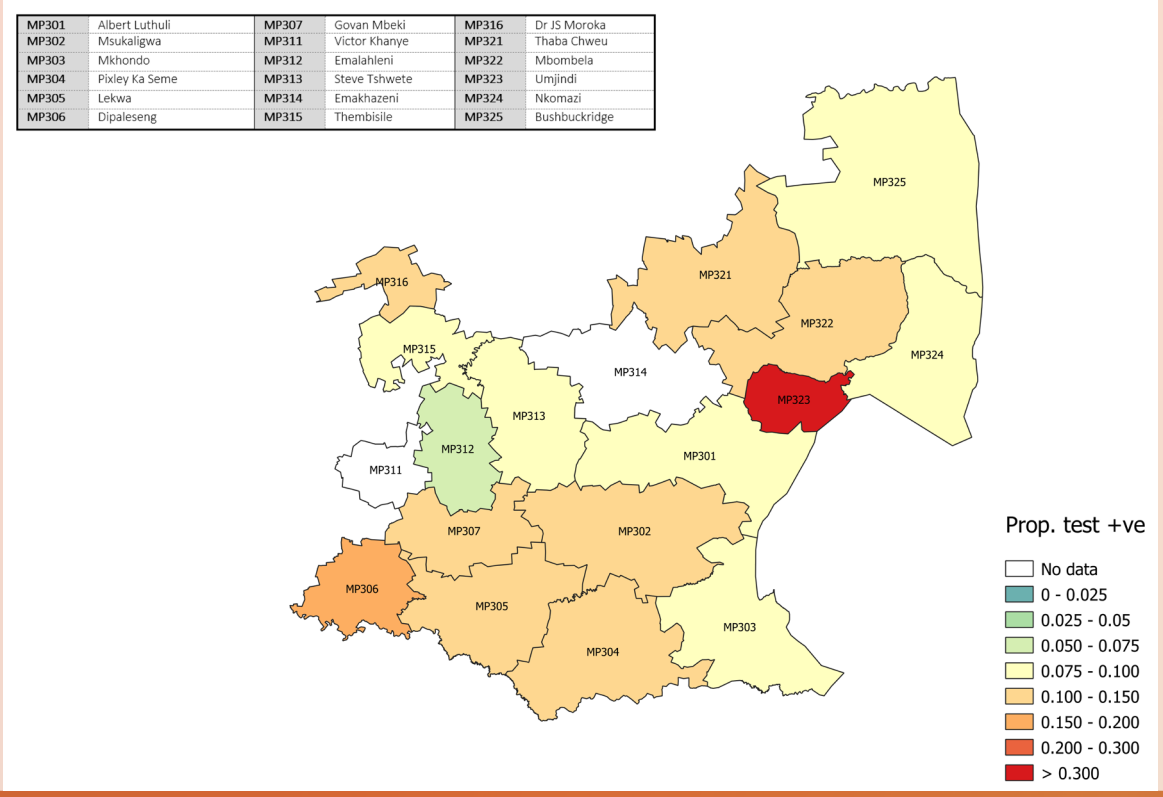

Figure 18. Proportion testing positive by health sub-district in Mpumalanga Province for the week of 21 - 27 February 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

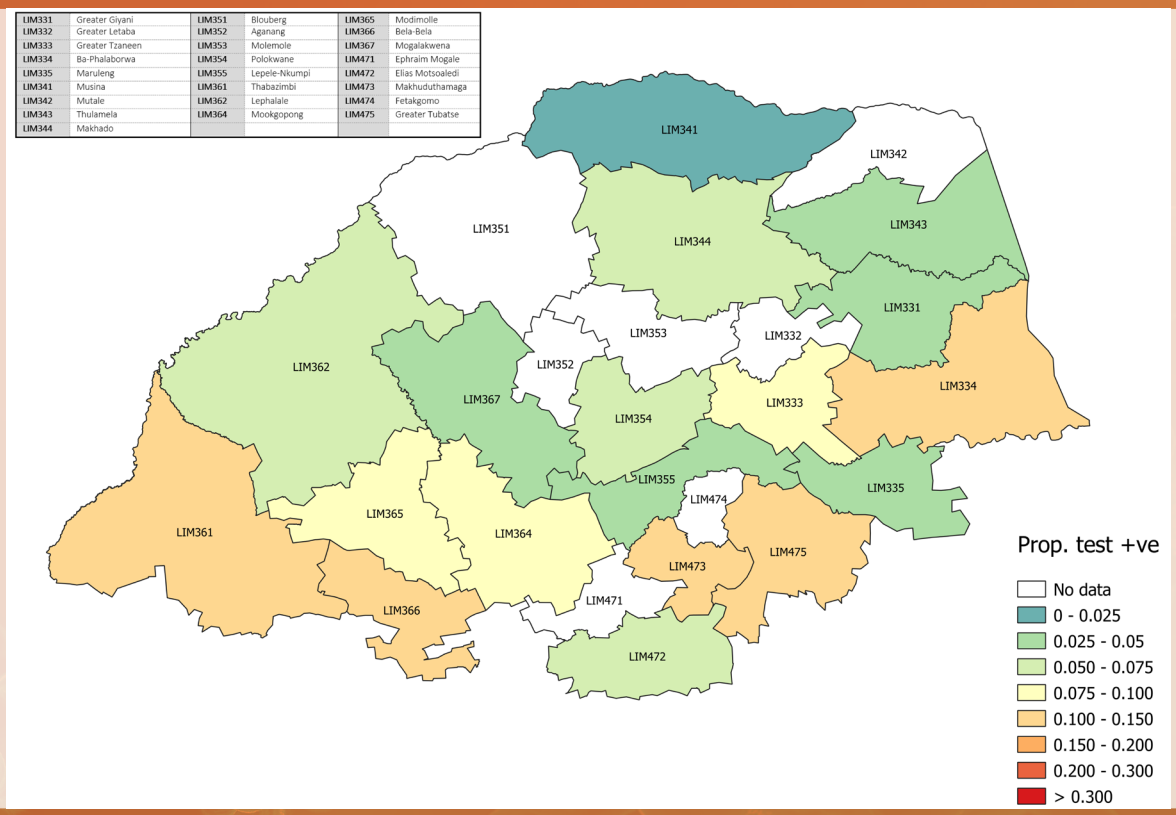

Figure 19. Proportion testing positive by health sub-district in Limpopo Province for the week of 21 - 27 February 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

Testing by patient admission status

In week 8 of 2021, 35.8% of tests were performed for hospitalised patients; 53.2% in the public sector and 26.2% in the private sector (Figure 20). The percentage testing positive continued to decrease among both inpatients and outpatients in the past week, and in week 8 was similar among outpatients (6.0%) and inpatients (5.8%) (Figure 21). In week 8 of 2021 the mean laboratory turnaround time in the public sector continued to be lower for inpatients (1.3 days) compared to outpatients (1.7 days) with decreases observed in both groups in the past few weeks (Figure 22).

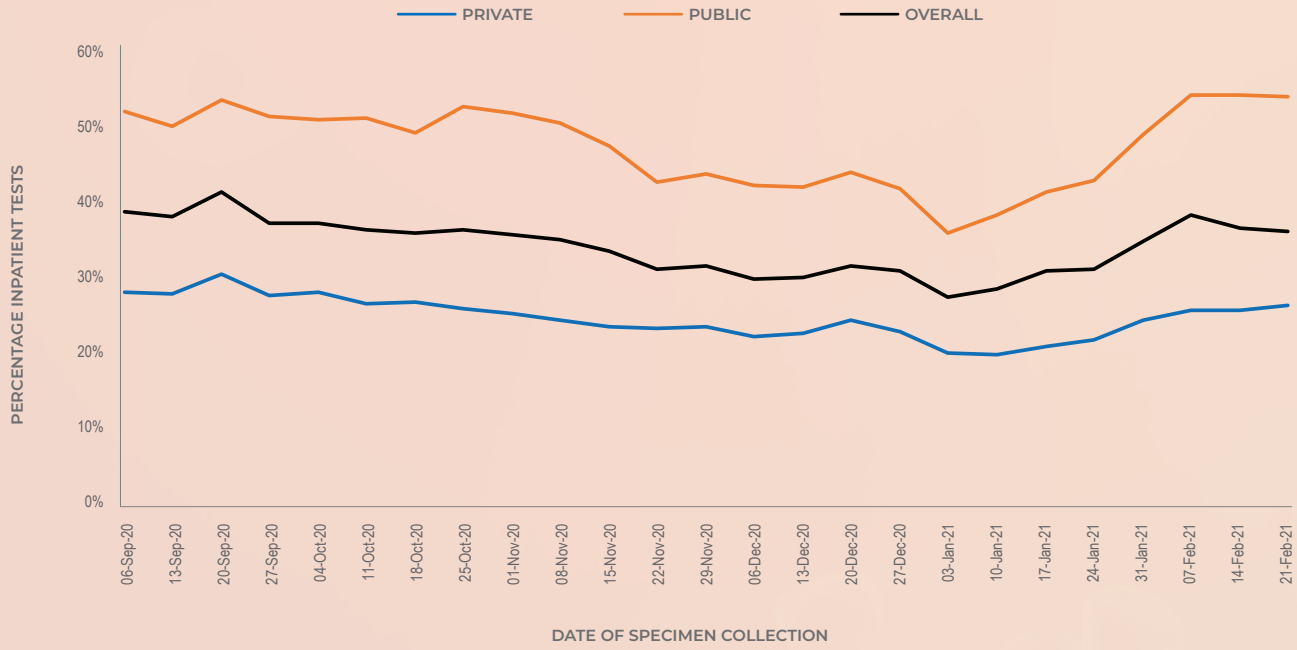

Figure 20. Percentage of inpatient tests performed by health sector, 6 September 2020 – 27 February 2021

Figure 21. Percentage testing positive by patient admission status in the public sector, 3 January – 27 February 2021

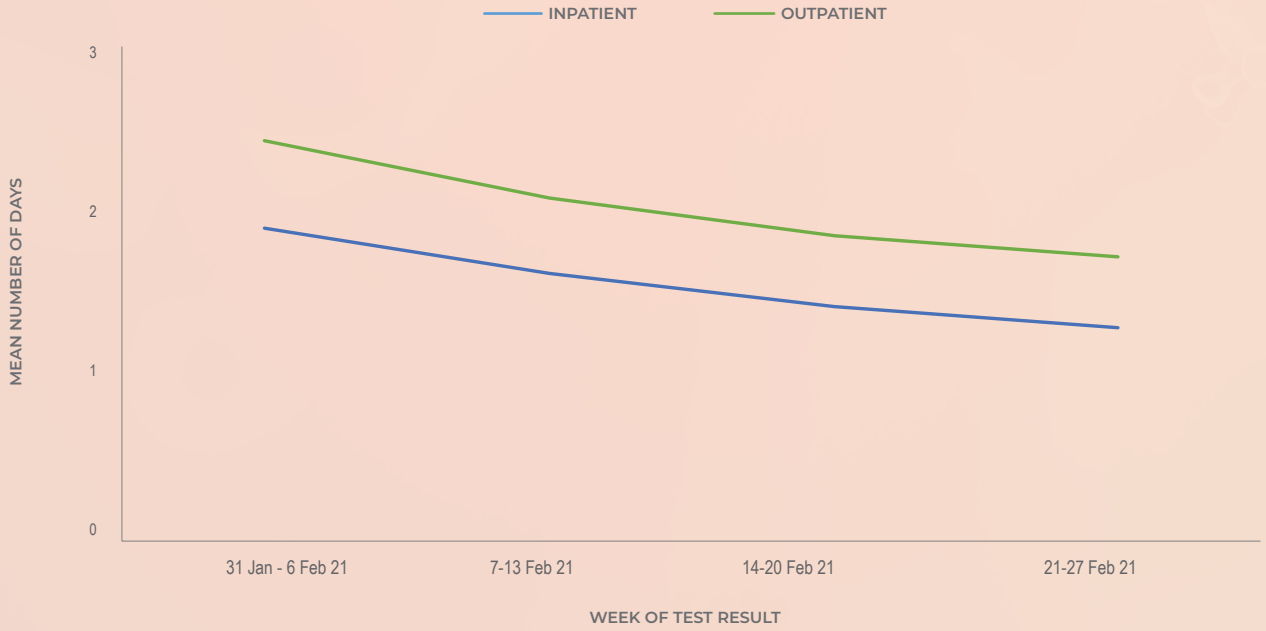

Figure 22. Mean number of days between date of specimen collection and date of test result in the public sector by patient admission status, 31 January – 27 February 2021

Testing by age and sex

Similar to the previous few weeks, the mean age of individuals tested in week 8 of 2021 was 39.1 years, and was similar among males (39.4 years) and females (38.9 years). As in the previous few weeks, the majority of tests (42.6%) were performed in individuals in the 25-44 years' age groups although the distribution of tests was slightly skewed towards younger age groups in females compared to males (Figure 23). In week 8, the testing rate remained slightly higher in females (284 per 100,000 persons) compared to males (272 per 100,000 persons) (Figure 24). The highest testing rates were observed in individuals ≥80 years of age (607 per 100,000 persons) in week 8. The percentage testing positive was highest in individuals aged 10-14 years (7.0%); in males the highest percentage testing positive was in the 10-14 year (6.7%) and 70-74 year age groups (6.7%), and in females was in the 55-59 years' age group (8.0%) (Figure 24).

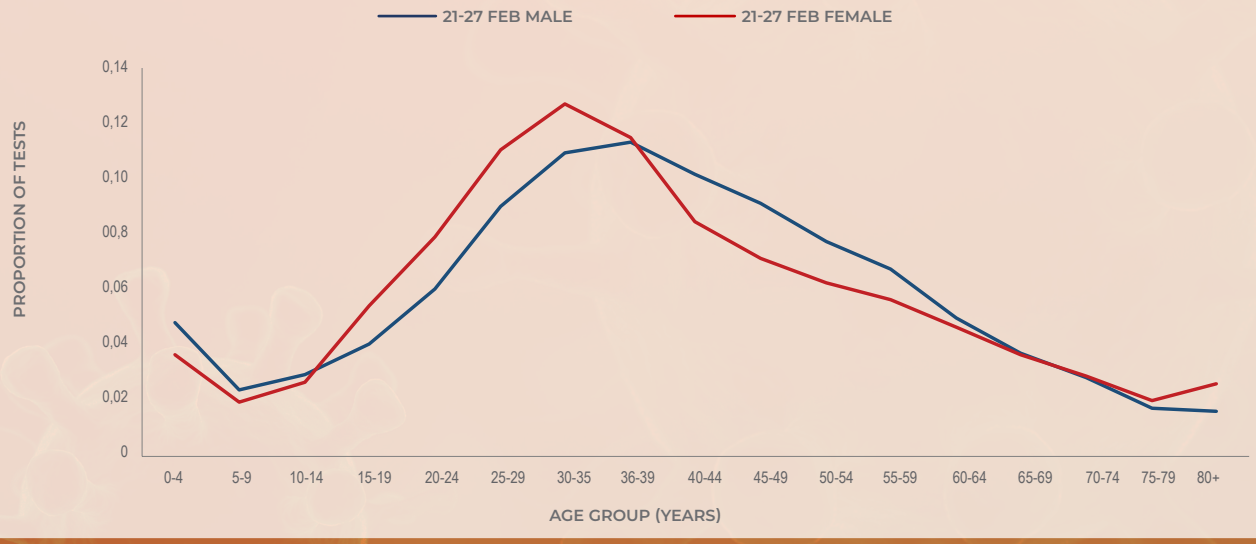

Figure 23. Proportion of tests by age group and sex, South Africa, week 8, 21 - 27 February 2021

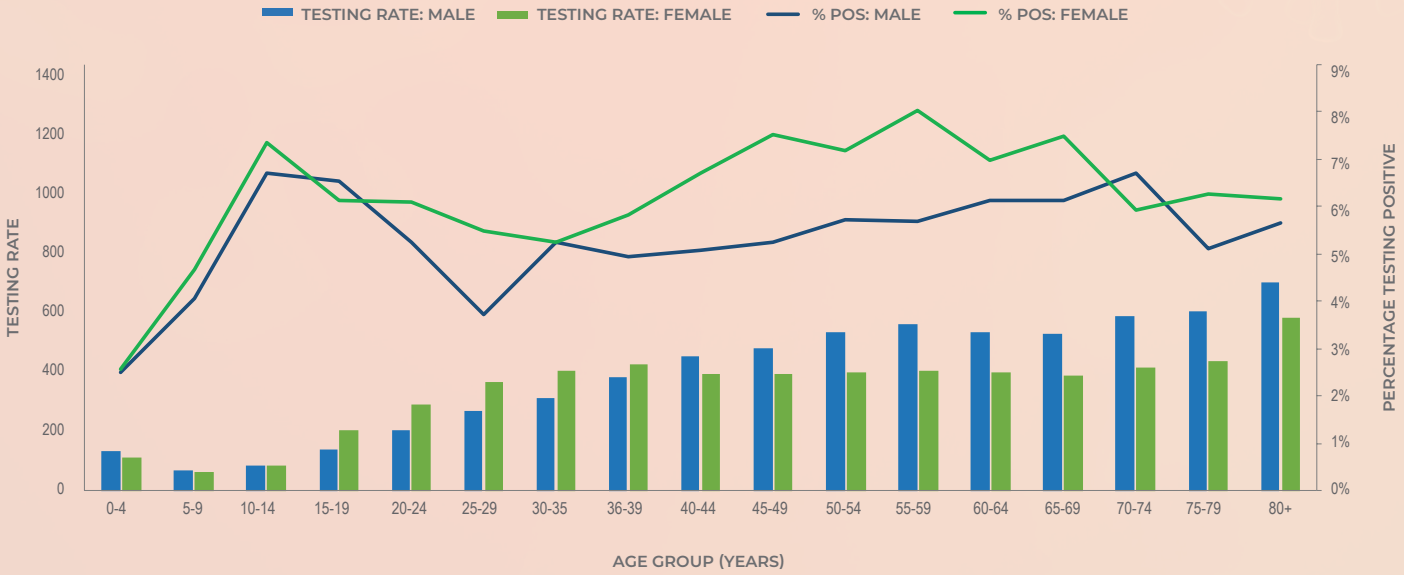

Figure 24. Testing rates per 100,000 persons and percentage testing positive by age group and sex, South Africa, week 8, 21 - 27 February 2021

Testing by test type

Up to the end of week 8 of 2021, 5.2% of all tests performed were antigen tests. The percentage of antigen tests was highest (20.1%) in week 5 and has subsequently declined to 17.0% of all tests in week 8 (Figure 25). In week 8, 28,955 antigen tests were performed, of which 76.7% were performed in the public sector. The majority of antigen tests have been performed in KwaZulu-Natal (47.1%) and Eastern Cape (14.5%) provinces. The percentage testing positive was higher for PCR tests compared to antigen tests, although decreases were observed for both types of tests in recent weeks (Figure 26). Not all antigen tests are included in this report, efforts are ongoing to improve completeness.

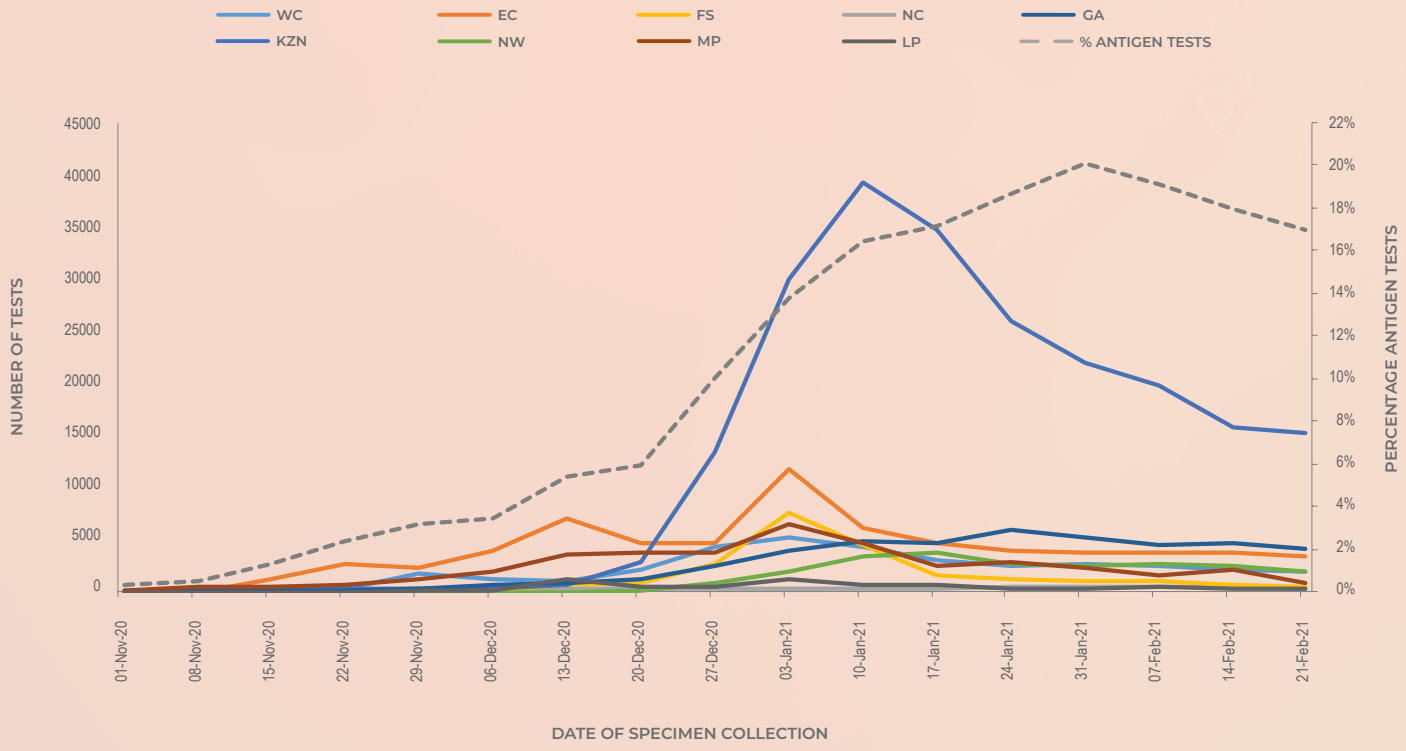

Figure 25. Number of antigen tests by province, and overall percentage antigen tests, South Africa, 1 November 2020 – 27 February 2021. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GT, Gauteng; NC, Northern Cape; NW, North West; MP, Mpumalanga; LP, Limpopo

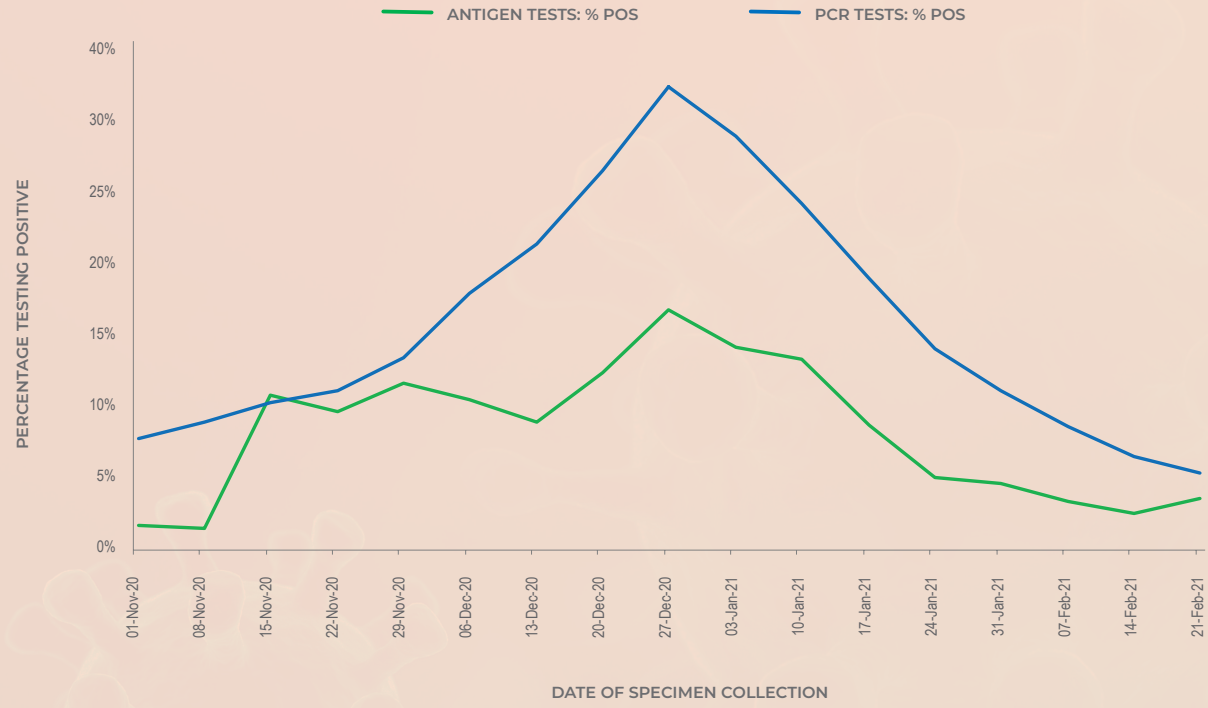

Figure 26. Percentage of laboratory tests positive for SARS-CoV-2 by test type and date of specimen collection, South Africa, 1 November 2020 – 27 February 2021

Limitations

- A backlog in testing of samples by laboratories affects the reported numbers of tests performed. As a result, numbers tested during this period may change in subsequent reports.
- If higher-priority specimens were tested preferentially, this would likely result in an inflated proportion testing positive.
- Different and changing testing strategies (targeted vs. mass testing and PCR vs. antigen-based tests) used by different provinces makes percentage testing positive difficult to interpret and compare.
- Health district and sub-district level were mapped based on the testing facility and not place of residence.
- Patient admission status was categorised based on the reported patient facility and may not reflect whether the patient was actually admitted to hospital.
- Antigen tests may be underestimated as they are used in a number of different settings and results may not be reported.

CONCLUSIONS

Weekly testing volumes have decreased since week 1 of 2021 (n=498,044), with the number of tests performed in week 8 of 2021 (n=169,734) similar to the previous 3 weeks. Gauteng (34.2%), KwaZulu-Natal (21.6%) and Western Cape (16.9%) provinces performed the largest number of tests in week 8. Testing rates were highest in week 8 in the Western Cape (409 per 100,000 persons) and Gauteng (375 per 100,000 persons) provinces and lowest in Limpopo (81 per 100,000 persons). Antigen tests accounted for 17.0% of all tests performed in week 8. The overall laboratory turnaround time for PCR tests was 1.1 days in week 8; 1.4 days in the public sector and 0.9 days in the private sector.

In the second wave of infections the percentage testing positive peaked at 34.7% in week 53 of 2020, and has subsequently decreased. In week 8 of 2021 the percentage testing positive decreased to 5.7%, the lowest observed since May 2020. The percentage testing positive in week 8 was highest in the Northern Cape (10.6%) and Mpumalanga (9.7%) provinces. The percentage testing positive was 5-9% in the Western Cape, Free State, KwaZulu-Natal, North West and Limpopo, and was <5% in the Eastern Cape and Gauteng in week 8. Compared to the previous week, the percentage testing positive decreased in week 8 in the Western Cape, Eastern Cape, Gauteng and Limpopo, and was unchanged in the Northern Cape, Free State, KwaZulu-Natal, North West and Mpumalanga.