COVID-19 TESTING SUMMARY

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

SOUTH AFRICA | WEEK **22** 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 5 June 2021 (Week 22 of 2021).

HIGHLIGHTS

- In the period 1 March 2020 through 5 June 2021, 11,817,863 (10,784,650 PCR and 1,033,213 antigen tests) for SARS-CoV-2 have been reported nationally.
- The number of tests reported in week 22 of 2021 (n=245,455) was similar to the previous three weeks.
- The testing rate in week 22 was 412 per 100,000 persons; highest in the Northern Cape (703 per 100,000 persons) and lowest in Limpopo (98 per 100,000 persons).
- In week 22 the percentage testing positive was 13.8%, which was 2.0% higher than the previous week
- The percentage testing positive in week 22 was highest in the Northern Cape (21.0%), North West (19.0%), Gauteng (18.0%) and Free State (17.4%) provinces. The percentage testing positive was between 10% and 15% in Mpumalanga and Limpopo, and was less than 10% in Western Cape, Eastern Cape and KwaZulu-Natal.
- In week 22, compared to the previous week, the percentage testing positive increased the Western Cape, Eastern Cape, KwaZulu-Natal, Gauteng, North West, Mpumalanga and Limpopo provinces. The percentage testing positive decreased in the Northern Cape and Free State provinces.
- The number of tests reported is likely underestimated as antigen tests are increasingly being used outside of laboratory settings and reporting may be delayed or results may not be reported.

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 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 reported between 1 March 2020 (week 10 of 2020), the week when the first case of COVID-19 was confirmed, and 5 June 2021 (week 21 of 2021).

Testing volumes and proportion testing positive

From 1 March 2020 through 5 June 2021, 11,817,863 SARS-CoV-2 tests were reported; 10,784,650 PCR and 1,033,213 antigen tests. The number of tests reported increased weekly from week 10 of 2020, with the highest number of tests reported during the first wave occurring in week 28 of 2020 (n=307,912), and subsequently decreased. Weekly testing volumes increased again from week 48 of 2020 (beginning 22 November 2020), with the highest weekly number of tests since the start of the pandemic reported in week 1 of 2021 (n=500,959). In week 22 of 2021, 245,455 tests were reported, similar to the volume of tests reported in the previous three weeks. 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).

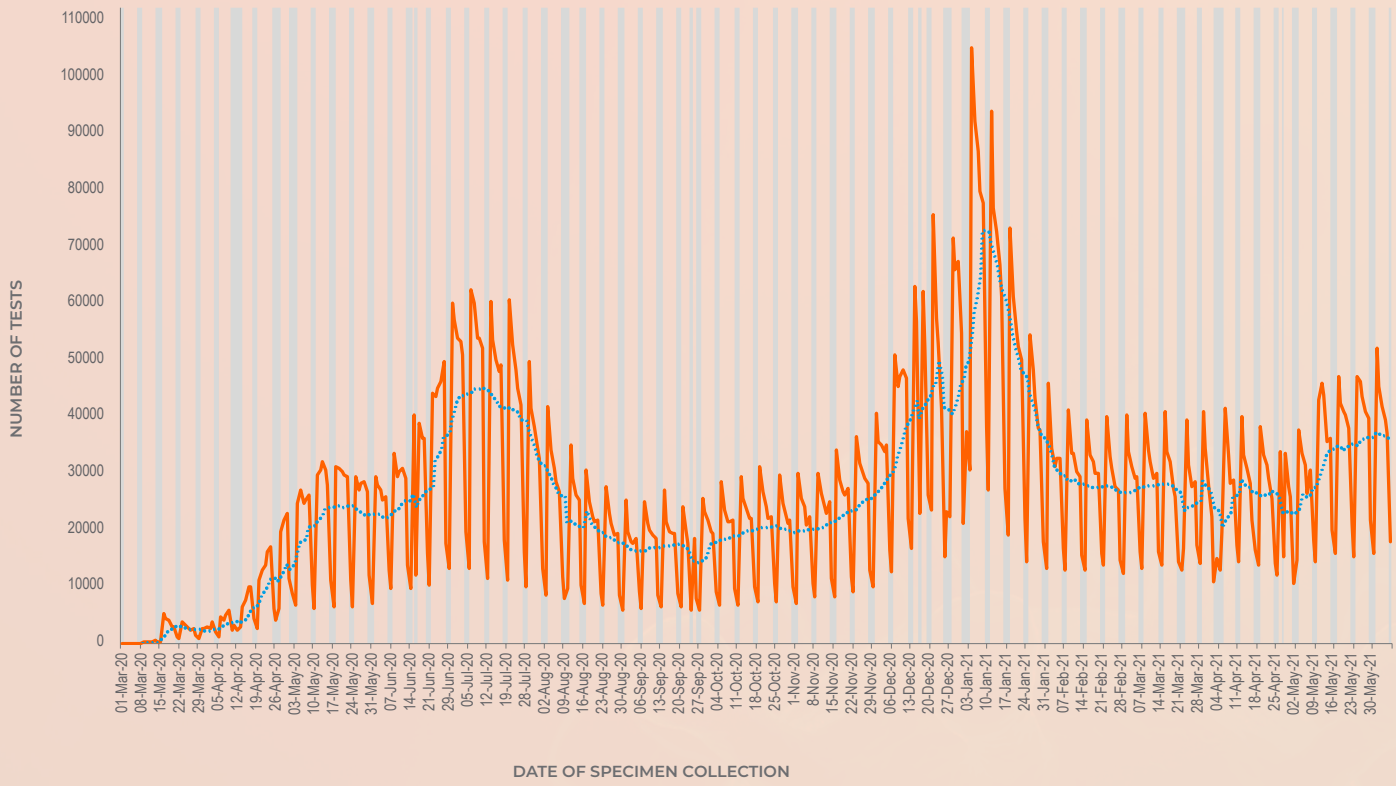

Figure 1. Number of SARS-CoV-2 tests reported by date of specimen collection, South Africa, 1 March 2020 – 5 June 2021. Blue dotted line shows the 7-day moving average of the number of tests reported. Grey bars highlight weekend days and public holidays.

The overall percentage testing positive from week 10 of 2020 through week 22 of 2021 was 15.2% (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 34.6% in week 53 of 2020. The percentage testing positive in week 22 of 2021 was 13.8%, higher than observed in the previous week (11.8%, P<0.001) and higher than observed since end January 2021 (Figure 2).

Table 1. Weekly number of SARS-CoV-2 tests and positive tests reported, South Africa, 1 March 2020 – 5 June 2021

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
10	01-Mar-20	456 (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	17544 (0.1)	544	3.1
14	29-Mar-20	18249 (0.2)	521	2.9
15	05-Apr-20	26299 (0.2)	796	3.0
16	12-Apr-20	43752 (0.4)	1295	3.0
17	19-Apr-20	79176 (0.7)	2177	2.7
18	26-Apr-20	93810 (0.8)	3205	3.4
19	03-May-20	142709 (1.2)	6018	4.2
20	10-May-20	165374 (1.4)	8092	4.9
21	17-May-20	166544 (1.4)	11379	6.8
22	24-May-20	156139 (1.3)	12967	8.3
23	31-May-20	153569 (1.3)	15079	9.8
24	07-Jun-20	173902 (1.5)	22361	12.9
25	14-Jun-20	186081 (1.6)	32649	17.5
26	21-Jun-20	252097 (2.1)	55049	21.8
27	28-Jun-20	302743 (2.6)	75309	24.9
28	05-Jul-20	307912 (2.6)	86038	27.9
29	12-Jul-20	285599 (2.4)	84927	29.7
30	19-Jul-20	270895 (2.3)	78635	29.0
31	26-Jul-20	216392 (1.8)	58393	27.0
32	02-Aug-20	179573 (1.5)	40996	22.8
33	09-Aug-20	141103 (1.2)	26265	18.6
34	16-Aug-20	135013 (1.1)	21377	15.8
35	23-Aug-20	123333 (1.0)	16331	13.2
36	30-Aug-20	112762 (1.0)	12790	11.3
37	06-Sep-20	116997 (1.0)	11953	10.2
38	13-Sep-20	120714 (1.0)	12011	9.9
39	20-Sep-20	98818 (0.8)	10098	10.2
40	27-Sep-20	123062 (1.0)	11008	8.9
41	04-Oct-20	131043 (1.1)	11778	9.0
42	11-Oct-20	137974 (1.2)	12077	8.8
43	18-Oct-20	142169 (1.2)	12069	8.5
44	25-Oct-20	135848 (1.1)	11478	8.4
45	01-Nov-20	138820 (1.2)	12135	8.7
46	08-Nov-20	147007 (1.2)	14845	10.1
47	15-Nov-20	160642 (1.4)	18762	11.7
48	22-Nov-20	175685 (1.5)	22051	12.6
49	29-Nov-20	203146 (1.7)	30766	15.1
50	06-Dec-20	267916 (2.3)	53310	19.9
51	13-Dec-20	294454 (2.5)	68575	23.3
52	20-Dec-20	284469 (2.4)	81951	28.8
53	27-Dec-20	334378 (2.8)	115730	34.6
1	03-Jan-21	500959 (4.2)	151001	30.1
2	10-Jan-21	417841 (3.5)	104768	25.1

3	17-Jan-21	327283 (2.8)	63237	19.3
4	24-Jan-21	249378 (2.1)	34617	13.9
5	31-Jan-21	203411 (1.7)	22328	11.0
6	07-Feb-21	193072 (1.6)	16440	8.5
7	14-Feb-21	190200 (1.6)	12128	6.4
8	21-Feb-21	184250 (1.6)	10356	5.6
9	28-Feb-21	189173 (1.6)	8665	4.6
10	07-Mar-21	192502 (1.6)	8307	4.3
11	14-Mar-21	185024 (1.6)	8127	4.4
12	21-Mar-21	171450 (1.5)	7320	4.3
13	28-Mar-21	162933 (1.4)	7039	4.3
14	04-Apr-21	179058 (1.5)	7255	4.1
15	11-Apr-21	182326 (1.5)	8790	4.8
16	18-Apr-21	182885 (1.5)	9417	5.1
17	25-Apr-21	156655 (1.3)	9140	5.8
18	02-May-21	189545 (1.6)	13348	7.0
19	09-May-21	234979 (2.0)	19758	8.4
20	16-May-21	241419 (2.0)	24020	9.9
21	23-May-21	249950 (2.1)	29375	11.8
22	30-May-21	245455 (2.1)	33882	13.8
	Total	**11,817,863(100.0)**	**1,794,121**	**15.2**

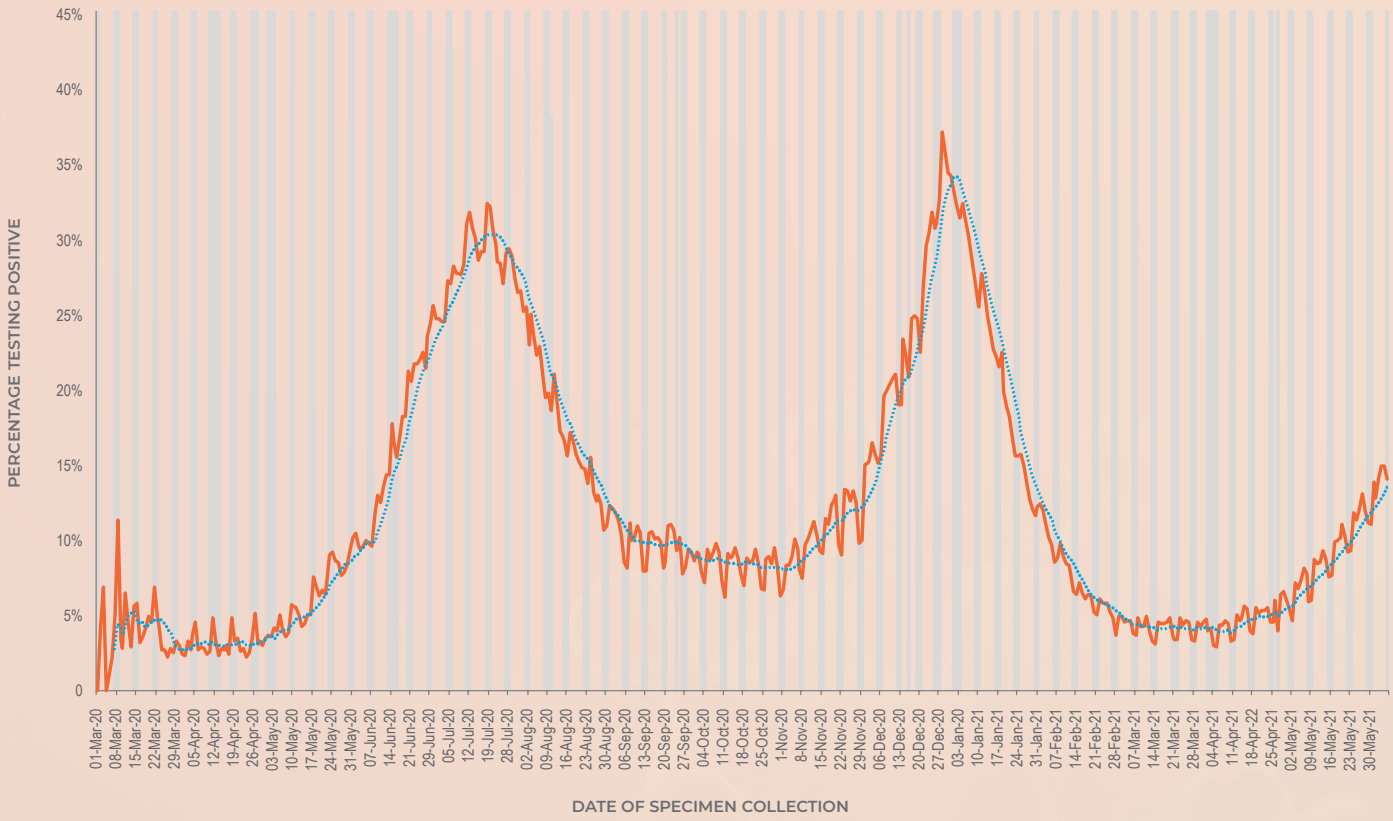

Figure 2. Percentage of tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March 2020 – 5 June 2021. Blue dotted line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

Testing in private and public sectors

From 1 March 2020 through 5 June 2021, 5,135,304 tests were reported in the public sector, with 15.7% testing positive. Over this same period, the private sector reported 6,682,559 tests, with 14.8% testing positive (Table 2). Overall, the public sector has reported 43.5% of tests and accounted for 44.8% 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 (34.9%) and private sector (34.4%). From week 21 to week 22 of 2021, the percentage testing positive increased in the public sector (10.4% in week 21 to 11.1% in week 22, P<0.001) and to a greater extent in the private sector (12.8% in week 21 to 15.4% in week 22, P<0.001). In week 22 the percentage testing positive in the private sector (15.4%) was 4.3% higher than in the public sector (11.1%, P<0.001).

The mean turnaround time for PCR tests reported in week 22 of 2021 was 1.1 days; 2.0 days in the public sector and 0.7 days in the private sector (Figure 3). Turnaround times for public sector PCR tests were ≤2 days in all provinces except the Northern Cape (3.3 days), Free State (3.1 days) and North West (3.3 days) in week 22 (Figure 4). Increases in turnaround time were observed in the Northern Cape, Free State, KwaZulu-Natal and North West in the past week. Twenty-one of the 28 (75.0%) NHLS laboratories performing PCR testing for SARS-CoV-2 had turnaround times ≤2 days in week 22 (Figure 5).

Table 2. Weekly number of tests and positive tests reported, by healthcare sector, South Africa, 1 March 2020 – 5 June 2021

		Public sector		Private sector		Public sector percentage of		Ratio of PTP[a]
Week number	Week beginning	Tests	Cases n (%)	Tests	Positive tests n (%)	Tests (%)	Positive tests (%)	
10	01-Mar-20	294	10 (3.4)	162	3 (1.9)	64.5	76.9	1.837
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	3478	149 (4.3)	14066	395 (2.8)	19.8	27.4	1.526
14	29-Mar-20	5868	194 (3.3)	12381	327 (2.6)	32.2	37.2	1.252
15	05-Apr-20	11735	417 (3.6)	14564	379 (2.6)	44.6	52.4	1.366
16	12-Apr-20	24167	672 (2.8)	19585	623 (3.2)	55.2	51.9	0.874
17	19-Apr-20	55110	1595 (2.9)	24066	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	94338	4507 (4.8)	48371	1511 (3.1)	66.1	74.9	1.529
20	10-May-20	108000	5443 (5.0)	57374	2649 (4.6)	65.3	67.3	1.092
21	17-May-20	98648	7031 (7.1)	67896	4348 (6.4)	59.2	61.8	1.113
22	24-May-20	77597	6411 (8.3)	78542	6556 (8.3)	49.7	49.4	0.990
23	31-May-20	63945	6626 (10.4)	89624	8453 (9.4)	41.6	43.9	1.099
24	07-Jun-20	64655	8039 (12.4)	109247	14322 (13.1)	37.2	36.0	0.948
25	14-Jun-20	61149	11982 (19.6)	124932	20667 (16.5)	32.9	36.7	1.185
26	21-Jun-20	90454	20425 (22.6)	161643	34624 (21.4)	35.9	37.1	1.054
27	28-Jun-20	106371	27244 (25.6)	196372	48065 (24.5)	35.1	36.2	1.046
28	05-Jul-20	117727	32239 (27.4)	190185	53799 (28.3)	38.2	37.5	0.968
29	12-Jul-20	110664	31383 (28.4)	174935	53544 (30.6)	38.7	37.0	0.927
30	19-Jul-20	105217	30319 (28.8)	165678	48316 (29.2)	38.8	38.6	0.988
31	26-Jul-20	81247	22782 (28.0)	135145	35611 (26.4)	37.5	39.0	1.064
32	02-Aug-20	70566	16996 (24.1)	109007	24000 (22.0)	39.3	41.5	1.094
33	09-Aug-20	58661	11172 (19.0)	82442	15093 (18.3)	41.6	42.5	1.040
34	16-Aug-20	56138	9621 (17.1)	78875	11756 (14.9)	41.6	45.0	1.150
35	23-Aug-20	50319	7790 (15.5)	73014	8541 (11.7)	40.8	47.7	1.323
36	30-Aug-20	45422	6096 (13.4)	67340	6694 (9.9)	40.3	47.7	1.350
37	06-Sep-20	51055	6421 (12.6)	65942	5532 (8.4)	43.6	53.7	1.499
38	13-Sep-20	53707	6547 (12.2)	67007	5464 (8.2)	44.5	54.5	1.495
39	20-Sep-20	44841	5530 (12.3)	53977	4568 (8.5)	45.4	54.8	1.457
40	27-Sep-20	48629	5568 (11.4)	74433	5440 (7.3)	39.5	50.6	1.567
41	04-Oct-20	50434	5689 (11.3)	80609	6089 (7.6)	38.5	48.3	1.493
42	11-Oct-20	53451	5702 (10.7)	84523	6375 (7.5)	38.7	47.2	1.414
43	18-Oct-20	56123	6045 (10.8)	86046	6024 (7.0)	39.5	50.1	1.539
44	25-Oct-20	51286	5721 (11.2)	84562	5757 (6.8)	37.8	49.8	1.639
45	01-Nov-20	52999	6061 (11.4)	85821	6074 (7.1)	38.2	49.9	1.616
46	08-Nov-20	58913	8097 (13.7)	88094	6748 (7.7)	40.1	54.5	1.794
47	15-Nov-20	67582	10584 (15.7)	93060	8178 (8.8)	42.1	56.4	1.782
48	22-Nov-20	74572	12199 (16.4)	101113	9852 (9.7)	42.4	55.3	1.679
49	29-Nov-20	81269	15730 (19.4)	121877	15036 (12.3)	40.0	51.1	1.569
50	06-Dec-20	107909	24715 (22.9)	160007	28595 (17.9)	40.3	46.4	1.282
51	13-Dec-20	117212	29815 (25.4)	177242	38760 (21.9)	39.8	43.5	1.163
52	20-Dec-20	109838	34124 (31.1)	174631	47827 (27.4)	38.6	41.6	1.134
53	27-Dec-20	151625	52930 (34.9)	182753	62800 (34.4)	45.3	45.7	1.016
1	03-Jan-21	236863	71046 (30.0)	264096	79955 (30.3)	47.3	47.1	0.991
2	10-Jan-21	203959	52946 (26.0)	213882	51822 (24.2)	48.8	50.5	1.071
3	17-Jan-21	165611	34448 (20.8)	161672	28789 (17.8)	50.6	54.5	1.168
4	24-Jan-21	123189	18982 (15.4)	126189	15635 (12.4)	49.4	54.8	1.244
5	31-Jan-21	99592	12038 (12.1)	103819	10290 (9.9)	49.0	53.9	1.220
6	07-Feb-21	91173	8486 (9.3)	101899	7954 (7.8)	47.2	51.6	1.192
7	14-Feb-21	86045	6632 (7.7)	104155	5496 (5.3)	45.2	54.7	1.461
8	21-Feb-21	82337	5774 (7.0)	101913	4582 (4.5)	44.7	55.8	1.560
9	28-Feb-21	87741	4662 (5.3)	101432	4003 (3.9)	46.4	53.8	1.346
10	07-Mar-21	92059	4570 (5.0)	100443	3737 (3.7)	47.8	55.0	1.334
11	14-Mar-21	89496	4427 (4.9)	95528	3700 (3.9)	48.4	54.5	1.277
12	21-Mar-21	75867	3439 (4.5)	95583	3881 (4.1)	44.3	47.0	1.116
13	28-Mar-21	70532	3445 (4.9)	92401	3594 (3.9)	43.3	48.9	1.256
14	04-Apr-21	77888	3336 (4.3)	101170	3919 (3.9)	43.5	46.0	1.106

15	11-Apr-21	83716	4331 (5.2)	98610	4459 (4.5)	45.9	49.3	1.144
16	18-Apr-21	78733	4672 (5.9)	104152	4745 (4.6)	43.1	49.6	1.302
17	25-Apr-21	67381	4092 (6.1)	89274	5048 (5.7)	43.0	44.8	1.074
18	02-May-21	77057	5396 (7.0)	112488	7952 (7.1)	40.7	40.4	0.991
19	09-May-21	87403	7232 (8.3)	147576	12526 (8.5)	37.2	36.6	0.975
20	16-May-21	94704	9026 (9.5)	146715	14994 (10.2)	39.2	37.6	0.933
21	23-May-21	110912	11551 (10.4)	139038	17824 (12.8)	44.4	39.3	0.812
22	30-May-21	90519	10030 (11.1)	154936	23852 (15.4)	36.9	29.6	0.720
	Total	**5,135,304**	**803,743 (15.7)**	**6,682,559**	**990,378 (14.8)**	**43.5**	**44.8**	**1.056**

[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)

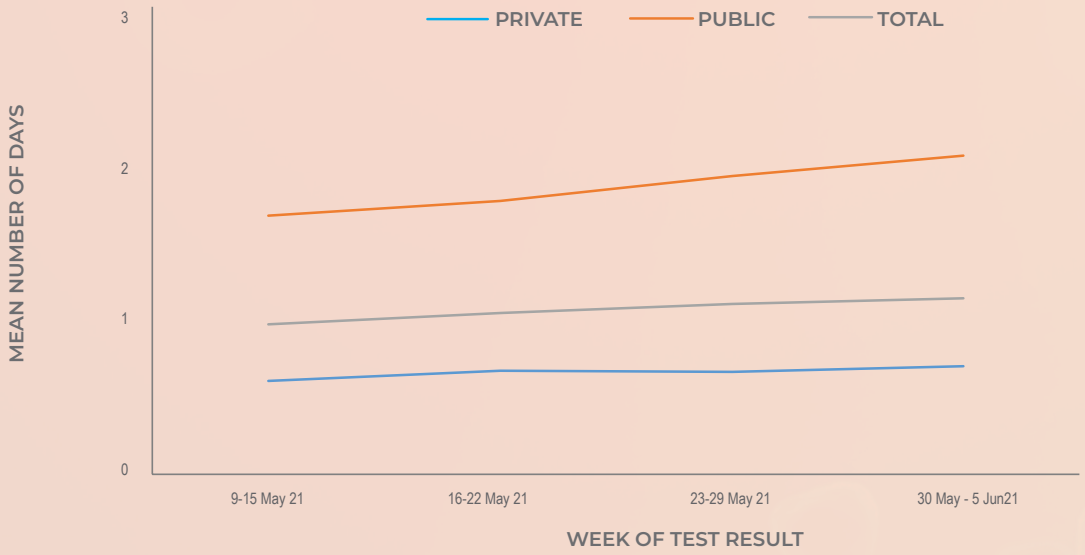

Figure 3. Mean number of days between date of specimen collection and date of test result for PCR tests, by week of test result, South Africa, 9 May – 5 June 2021

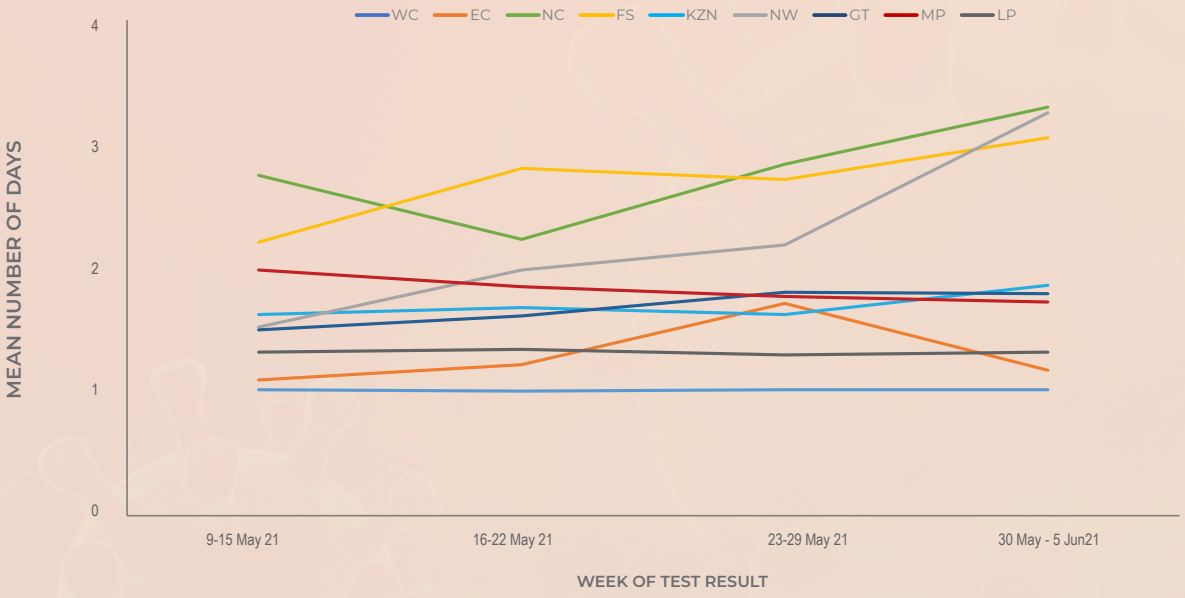

Figure 4. Mean number of days between date of specimen collection and date of test result for PCR tests, by week of test result and province, public sector, South Africa, 9 May – 5 June 2021. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GT, Gauteng; NC, Northern Cape; NW, North West; MP, Mpumalanga; LP, Limpopo

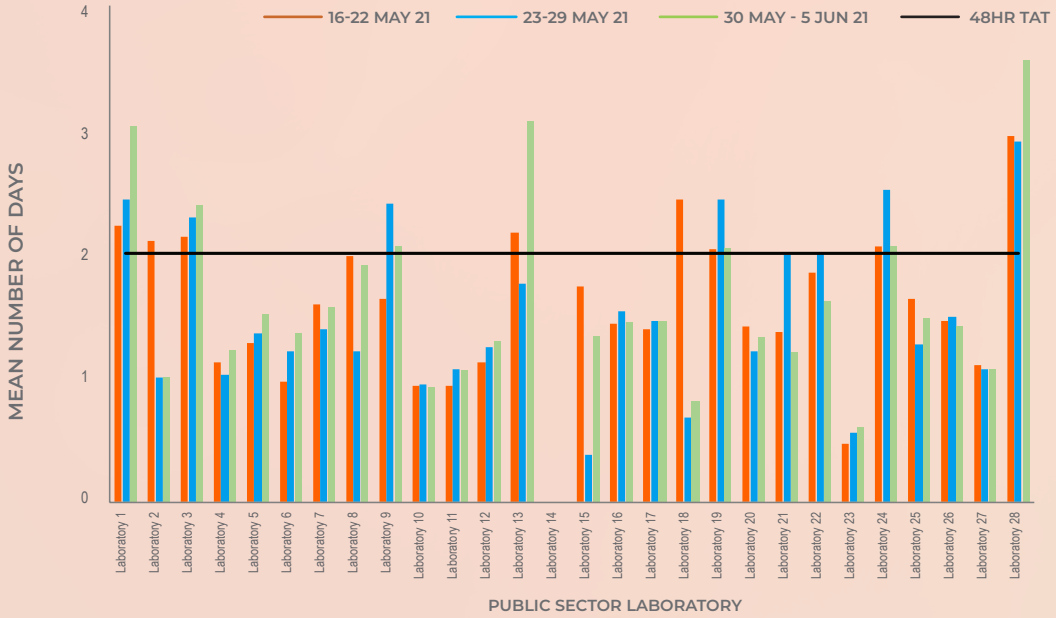

Figure 5. Mean number of days between date of specimen collection and date of test result for PCR tests, by public sector laboratory, 16 May – 5 June 2021. The horizontal black line indicates 48-hour turnaround time (TAT).

Testing by province

Gauteng reported the largest number of tests (42.4%), followed by Western Cape (15.0%) and KwaZulu-Natal (13.1%) provinces in week 22 of 2021 (Table 3). The overall testing rate decreased slightly from 419 per 100,000 persons in week 21 to 412 per 100,000 in week 22. The testing rate ranged from 703 per 100,000 persons in the Northern Cape to 98 per 100,000 persons in Limpopo (Figure 6). Testing rates decreased in the Free State and to a greater extent in the Northern Cape (1139 per 100,000 in week 21 to 703 per 100,000 in week 22). Testing rates increased slightly in Gauteng and were similar to the previous week in all other provinces.

The percentage testing positive in week 22 was highest in the Northern Cape (21.0%), North West (19.0%), Gauteng (18.0%) and Free State (17.4%) provinces. The percentage testing positive was between 10% and 15% in Mpumalanga and Limpopo, and was less than 10% in Western Cape, Eastern Cape and KwaZulu-Natal (Figure 7 and Table 3). Compared to the previous week, the percentage testing positive in week 22 increased the Western Cape (P<0.001), Eastern Cape (P<0.001), KwaZulu-Natal (P<0.001), Gauteng (P<0.001), North West (P<0.001), Mpumalanga (P<0.001) and Limpopo (P<0.001) provinces. The percentage testing positive decreased in the Northern Cape (P=0.022) and Free State (P<0.001) provinces. The percentage testing positive was higher than the national average, not weighted for population size, in the Northern Cape, Free State, North West, Mpumalanga, Limpopo and Gauteng provinces (Figure 7).

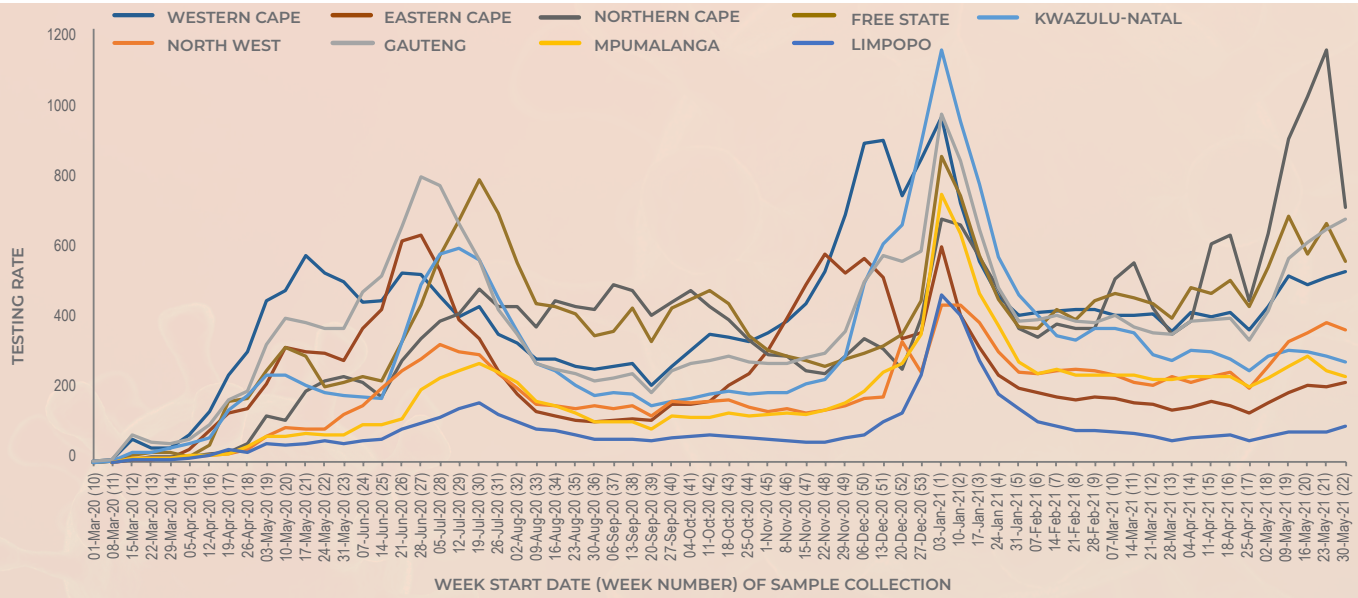

Figure 6. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 March 2020 – 5 June 2021

Table 3. Weekly number of tests and positive tests reported, by province, South Africa, 16 May – 5 June 2021

		16-22 May 2021		23-29 May 2021		30 May - 5 Jun 2021			
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	34442	1870 (5.4)	35882	2304 (6.4)	36864	2986 (8.1)	526	1.7%
Eastern Cape	6734001	14223	486 (3.4)	13998	676 (4.8)	14844	914 (6.2)	220	1.3%
Northern Cape	1292786	13074	3218 (24.6)	14732	3282 (22.3)	9089	1910 (21.0)	703	-1.3%
Free State	2928903	16898	3100 (18.3)	19324	3634 (18.8)	16311	2833 (17.4)	557	-1.4%
KwaZulu-Natal	11531628	35078	919 (2.6)	33614	1027 (3.1)	32069	1236 (3.9)	278	0.8%
North West	4108816	14698	2497 (17.0)	15861	2772 (17.5)	15085	2868 (19.0)	367	1.5%
Gauteng	15488137	94231	10277 (10.9)	99680	13754 (13.8)	104069	18700 (18.0)	672	4.2%
Mpumalanga	4679786	13644	1252 (9.2)	11783	1380 (11.7)	11026	1537 (13.9)	236	2.2%
Limpopo	5852553	4903	364 (7.4)	4815	517 (10.7)	5741	822 (14.3)	98	3.6%
Unknown		228	37 (16.2)	261	29 (11.1)	357	76 (21.3)		
Total	**59622350**	**241419**	**24020 (9.9)**	**249950**	**29375 (11.8)**	**245455**	**33882 (13.8)**	**412**	**2.0%**

[a] 2020 Mid-year population Statistics SA

[b] Current week compared to previous week

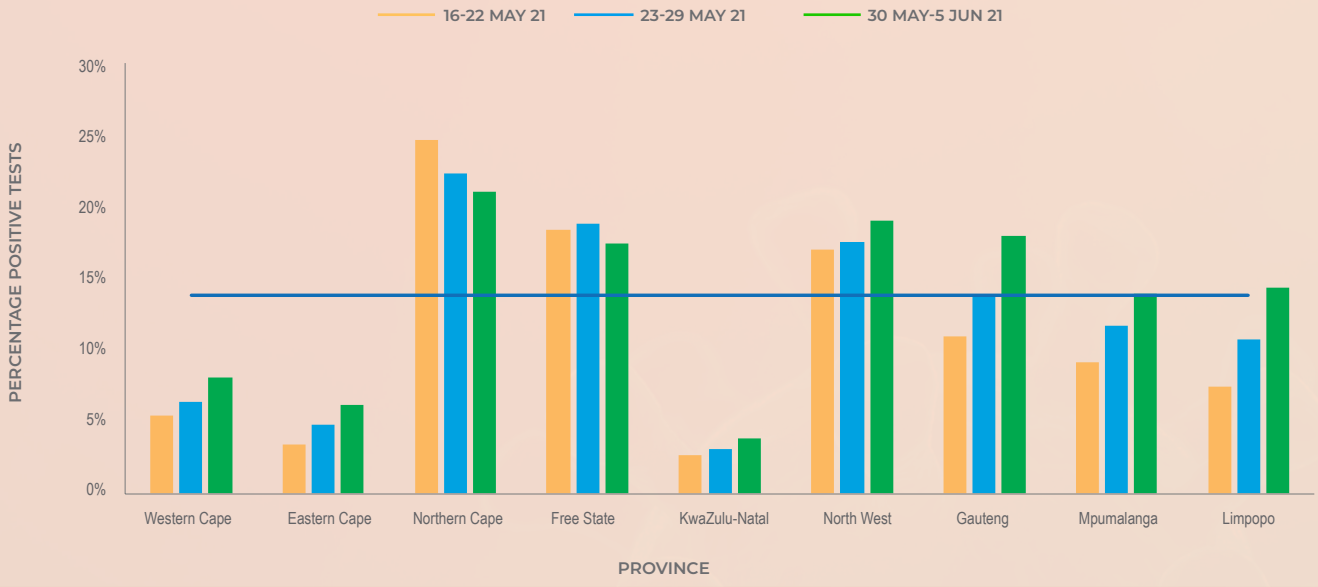

Figure 7. Weekly percentage testing positive, by province, South Africa, 16 May – 5 June 2021. The horizontal blue line shows the national mean for week 22, beginning 30 May 2021

Testing in the public sector

In the public sector, the percentage testing positive increased in the past week (10.4% in week 21 to 11.1% in week 22, P<0.001) (Table 4). The percentage testing positive in week 22 was highest in the Northern Cape (19.8%), Gauteng (16.8%) and North West (16.3%) 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, Gauteng and Limpopo provinces (Figure 8).

Table 4. Weekly number of tests and positive tests reported in the public sector, by province, South Africa, 16 May – 5 June 2021

	16-22 May 2021		23-29 May 2021		30 May - 5 Jun 2021	
Province	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**
Western Cape	10114	503 (5.0)	13327	680 (5.1)	12355	841 (6.8)
Eastern Cape	8426	149 (1.8)	8635	262 (3.0)	8506	371 (4.4)
Northern Cape	8639	2075 (24.0)	10706	2244 (21.0)	5329	1056 (19.8)
Free State	8105	1345 (16.6)	11119	1852 (16.7)	7664	1112 (14.5)
KwaZulu-Natal	20863	467 (2.2)	20412	459 (2.2)	18128	460 (2.5)
North West	6378	1158 (18.2)	8036	1378 (17.1)	6032	982 (16.3)
Gauteng	24540	2846 (11.6)	32286	4074 (12.6)	27123	4566 (16.8)
Mpumalanga	6007	384 (6.4)	5083	471 (9.3)	3774	412 (10.9)
Limpopo	1631	99 (6.1)	1305	131 (10.0)	1605	230 (14.3)
Unknown	1	0 (0.0)	3	0 (0.0)	3	0 (0.0)
Total	**94704**	**9026 (9.5)**	**110912**	**11551 (10.4)**	**90519**	**10030 (11.1)**

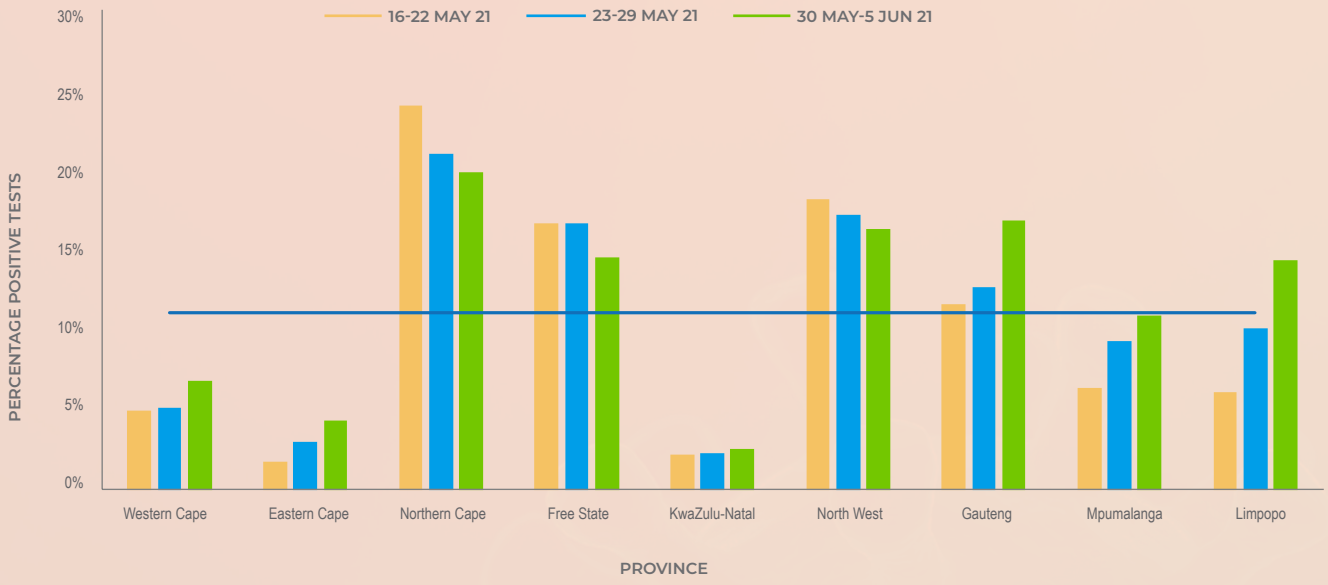

Figure 8. Weekly percentage testing positive in the public sector, by province, South Africa, 16 May – 5 June 2021. The horizontal blue line shows the national mean for week 22 of 2021, beginning 30 May 2021.

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 30 May – 5 June 2021. Seventeen of the 25 public facilities showing the highest PTP are in Gauteng, with the three in North West, and two each in the Northern Cape and Limpopo.

Table 5.1 Public sector healthcare facilities with a high proportion testing positive, 30 May – 5 June 2021

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Gauteng	63	0.810 (0.713;0.906)
Facility 2	Limpopo	31	0.774 (0.627;0.921)
Facility 3	North West	25	0.520 (0.324;0.716)
Facility 4	Mpumalanga	35	0.514 (0.349;0.680)
Facility 5	Gauteng	51	0.510 (0.373;0.647)
Facility 6	North West	41	0.488 (0.335;0.641)
Facility 7	Gauteng	200	0.465 (0.396;0.534)
Facility 8	Gauteng	26	0.462 (0.270;0.653)
Facility 9	Northern Cape	48	0.458 (0.317;0.599)
Facility 10	Gauteng	36	0.444 (0.282;0.607)
Facility 11	Gauteng	25	0.440 (0.245;0.635)
Facility 12	Gauteng	37	0.432 (0.273;0.592)
Facility 13	Gauteng	58	0.431 (0.304;0.558)
Facility 14	Gauteng	29	0.414 (0.235;0.593)
Facility 15	Northern Cape	34	0.412 (0.246;0.577)
Facility 16	Gauteng	25	0.400 (0.208;0.592)
Facility 17	Limpopo	73	0.397 (0.285;0.510)
Facility 18	Gauteng	43	0.395 (0.249;0.541)
Facility 19	Gauteng	46	0.391 (0.250;0.532)
Facility 20	North West	109	0.385 (0.294;0.477)
Facility 21	Gauteng	26	0.385 (0.198;0.572)
Facility 22	Gauteng	47	0.383 (0.244;0.522)
Facility 23	Gauteng	45	0.378 (0.236;0.519)
Facility 24	Gauteng	85	0.376 (0.273;0.479)
Facility 25	Gauteng	48	0.375 (0.238;0.512)

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 30 May – 5 June 2021, with the highest proportion testing positive nationally. Private-sector facilities with high proportions testing positive are concentrated in Gauteng (20).

Table 5.2 Private sector healthcare facilities with a high proportion testing positive, 30 May – 5 June 2021

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Gauteng	192	0.474 (0.403;0.545)
Facility 2	Northern Cape	49	0.469 (0.330;0.609)
Facility 3	Gauteng	149	0.430 (0.350;0.509)
Facility 4	Gauteng	45	0.422 (0.278;0.567)
Facility 5	Gauteng	48	0.417 (0.277;0.556)
Facility 6	Gauteng	72	0.403 (0.289;0.516)
Facility 7	Gauteng	33	0.394 (0.227;0.561)
Facility 8	Gauteng	31	0.387 (0.216;0.559)
Facility 9	Gauteng	75	0.387 (0.276;0.497)
Facility 10	Gauteng	48	0.375 (0.238;0.512)
Facility 11	Gauteng	59	0.373 (0.249;0.496)
Facility 12	Free State	38	0.368 (0.215;0.522)
Facility 13	Gauteng	50	0.360 (0.227;0.493)
Facility 14	North West	184	0.359 (0.289;0.428)
Facility 15	Gauteng	246	0.358 (0.298;0.418)
Facility 16	Gauteng	246	0.358 (0.298;0.418)
Facility 17	North West	56	0.357 (0.232;0.483)
Facility 18	Gauteng	123	0.350 (0.265;0.434)
Facility 19	Gauteng	333	0.348 (0.297;0.400)
Facility 20	Gauteng	230	0.343 (0.282;0.405)
Facility 21	Gauteng	243	0.342 (0.282;0.401)
Facility 22	Gauteng	282	0.340 (0.285;0.396)
Facility 23	Mpumalanga	200	0.340 (0.274;0.406)
Facility 24	Gauteng	158	0.335 (0.262;0.409)
Facility 25	Gauteng	81	0.333 (0.231;0.436)

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

Health district-level results

The data from geolocatable public testing (almost every public sector facility in the country) and private testing (approximately 84% of private testing facilities) in the week from 30 May – 5 June 2021 have been located within the spatial framework of the health districts and health sub-districts (in the metros). Estimates of overall prevalence were derived using regression techniques. These estimates were then 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. Districts with fewer than 20 tests reported 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 the table below. Six of the 25 districts are in each of North West and Gauteng, with five in the Northern Cape and three each in the Free State and Limpopo.

Five districts (three in the North West, two in Limpopo) showed a PTP in the current week in excess of 30%, compared to seven in the preceding week. PTP exceeded 20% in all 25 districts (25 in the previous week). Significant increases were observed in nine of these 25 districts (five in Gauteng, two in the North West, and one each in Limpopo and Mpumalanga). A (marginally) significant decrease was observed in Sol Plaatjie in the Northern Cape.

Table 6. Health sub-districts with the highest proportion testing positive based on public and private sector data for the week of 30 May – 5 June 2021

Health district or sub-district	Province	PTP (95% CI)	Previous week
Lekwa-Teemane	North West	0.358 (0.227-0.488)	0.230 (0.119-0.340)
Ditsobotla	North West	0.342 (0.238-0.446)	0.222 (0.119-0.326)
Bela-Bela	Limpopo	0.341 (0.240-0.442)	0.129 (0.045-0.213)
Ephraim Mogale	Limpopo	0.319 (0.219-0.419)	...
Naledi	North West	0.305 (0.260-0.351)	0.115 (0.008-0.221)
Tshwane 7	Gauteng	0.298 (0.243-0.353)	0.125 (0.079-0.171)
Dipaleseng	Mpumalanga	0.295 (0.185-0.405)	0.255 (0.152-0.358)
Randfontein	Gauteng	0.292 (0.267-0.317)	0.154 (0.131-0.177)
Dikgatlong	Northern Cape	0.289 (0.183-0.395)	0.344 (0.262-0.427)
Westonaria	Gauteng	0.288 (0.188-0.388)	0.110 (0.027-0.194)
Lekwa	Mpumalanga	0.283 (0.235-0.332)	0.151 (0.114-0.189)
Johannesburg G	Gauteng	0.281 (0.262-0.300)	0.225 (0.207-0.243)
Masilonyana	Free State	0.270 (0.124-0.417)	0.131 (0.061-0.201)
Ga-Segonyana	Northern Cape	0.269 (0.213-0.326)	0.347 (0.298-0.396)
Siyancuma	Northern Cape	0.264 (0.213-0.314)	0.234 (0.207-0.260)
Sol Plaatjie	Northern Cape	0.252 (0.238-0.266)	0.282 (0.269-0.295)
Thabazimbi	Limpopo	0.246 (0.215-0.277)	0.199 (0.166-0.233)
Kgetlengrivier	North West	0.237 (0.171-0.303)	0.083 (0.036-0.130)
Tlokwe City Council	North West	0.237 (0.214-0.259)	0.208 (0.186-0.229)
Matzikama	Western Cape	0.226 (0.186-0.266)	0.230 (0.186-0.273)
Mafikeng	North West	0.223 (0.202-0.245)	0.259 (0.238-0.280)
Magareng	Northern Cape	0.222 (0.186-0.258)	0.180 (0.126-0.235)
Emfuleni	Gauteng	0.221 (0.210-0.232)	0.197 (0.187-0.208)
Tshwane 4	Gauteng	0.217 (0.204-0.231)	0.133 (0.119-0.147)
Msukaligwa	Mpumalanga	0.215 (0.181-0.250)	0.188 (0.159-0.217)

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 the current week 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), and where more than 20 tests were conducted in the present week, is presented graphically below.

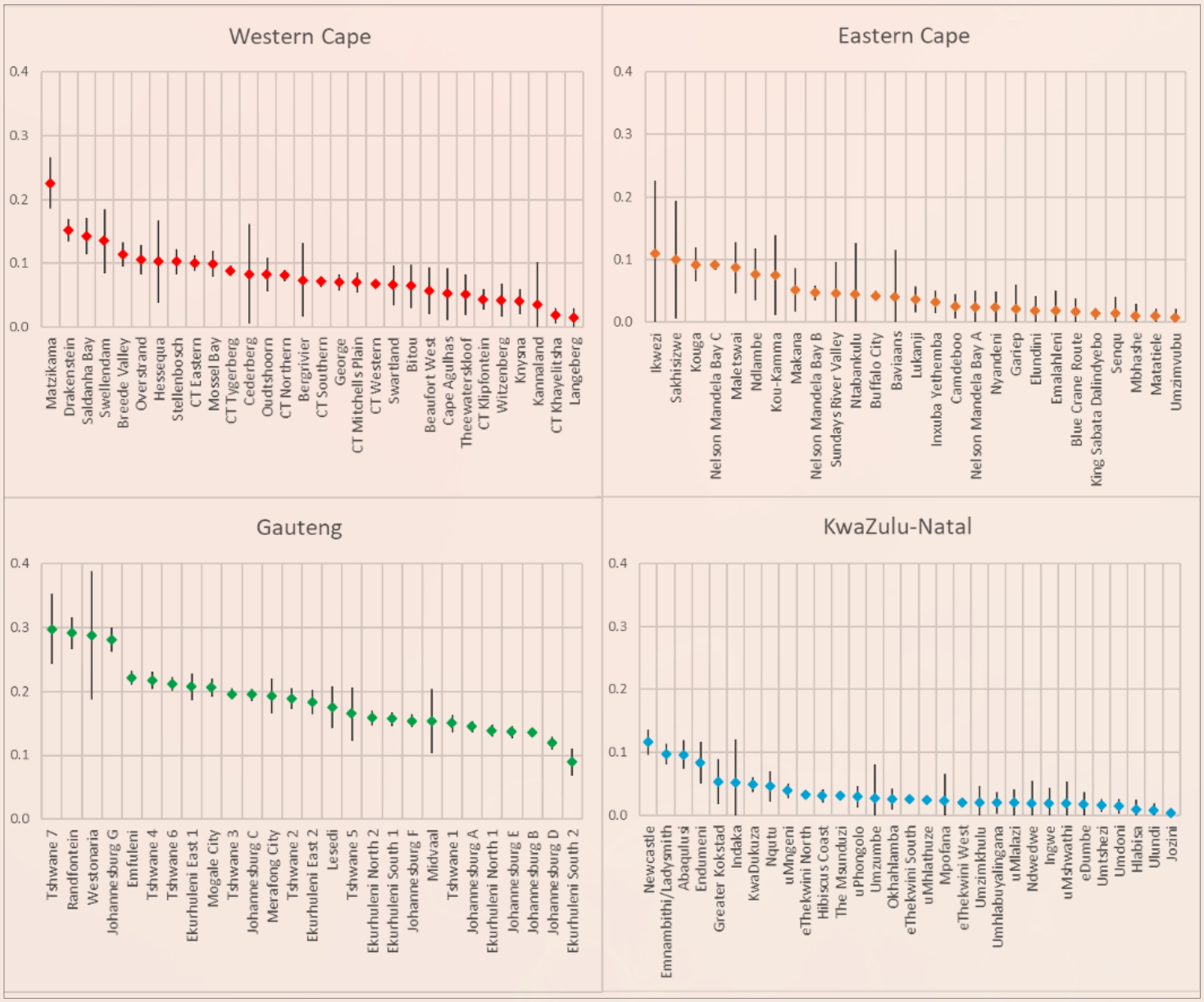

Figure 9.1 Proportions testing positive by health sub-district in the Western Cape, Eastern Cape, Gauteng and KwaZulu-Natal provinces based on public and private sector data for the week of 30 May – 5 June 2021.

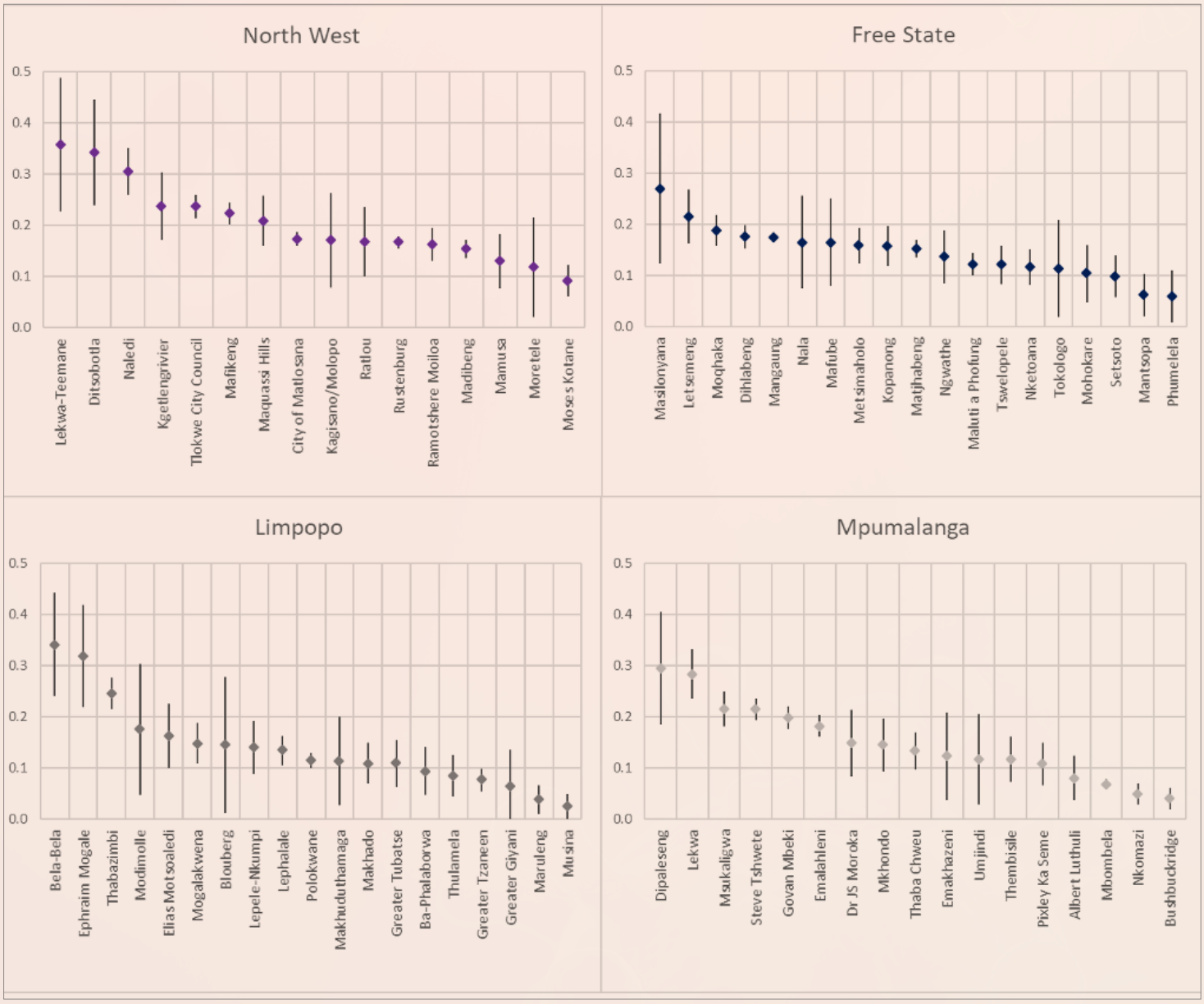

Figure 9.2 Proportions testing positive by health sub-district in the North West, Free State, Limpopo and Mpumalanga provinces based on public and private sector data for the week of 30 May – 5 June 2021.

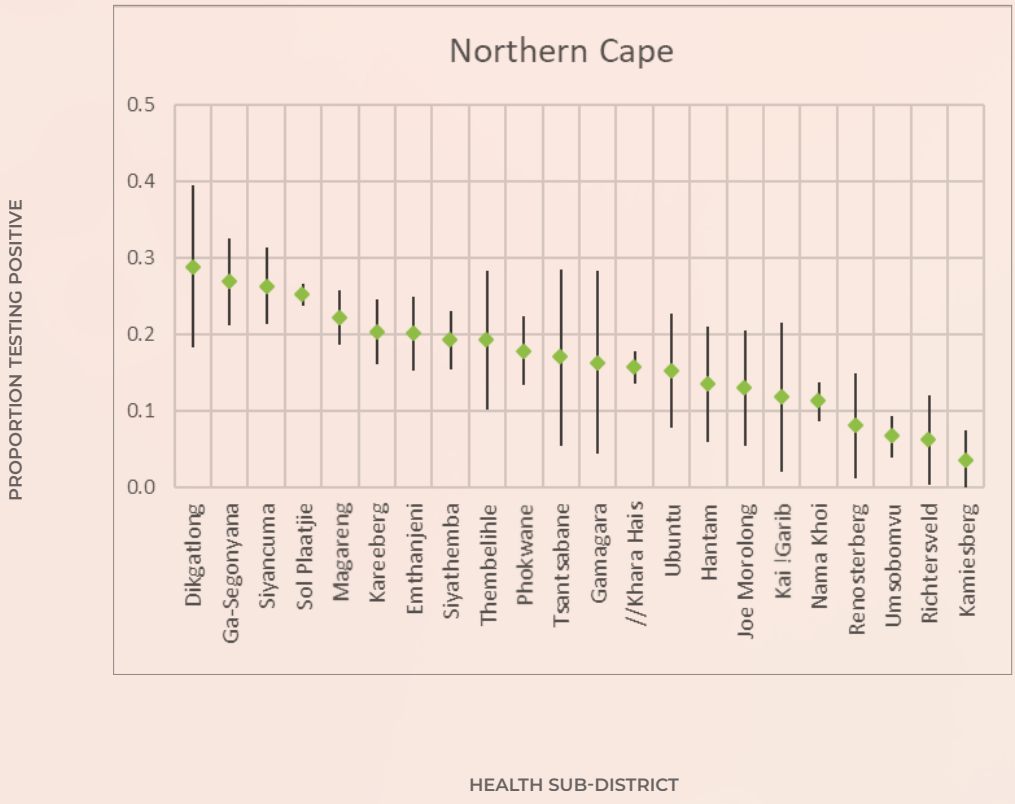

Figure 9.3 Proportions testing positive by health sub-districts in the Northern Cape Province based on public and private sector data for the week of 30 May – 5 June 2021.

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).

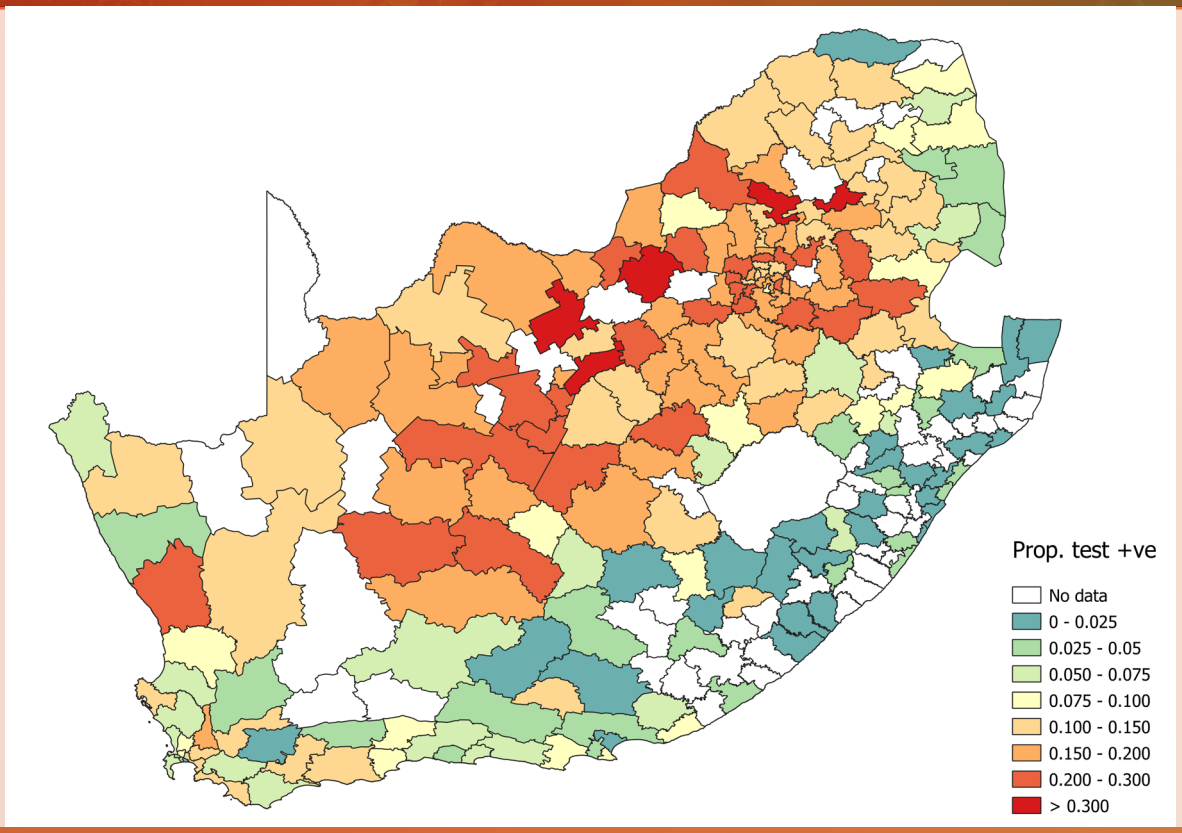

Figure 10. Proportion testing positive by health sub-district in South Africa for the week of 30 May – 5 June 2021. Areas shaded white represent districts in which either (i) no tests were reported, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

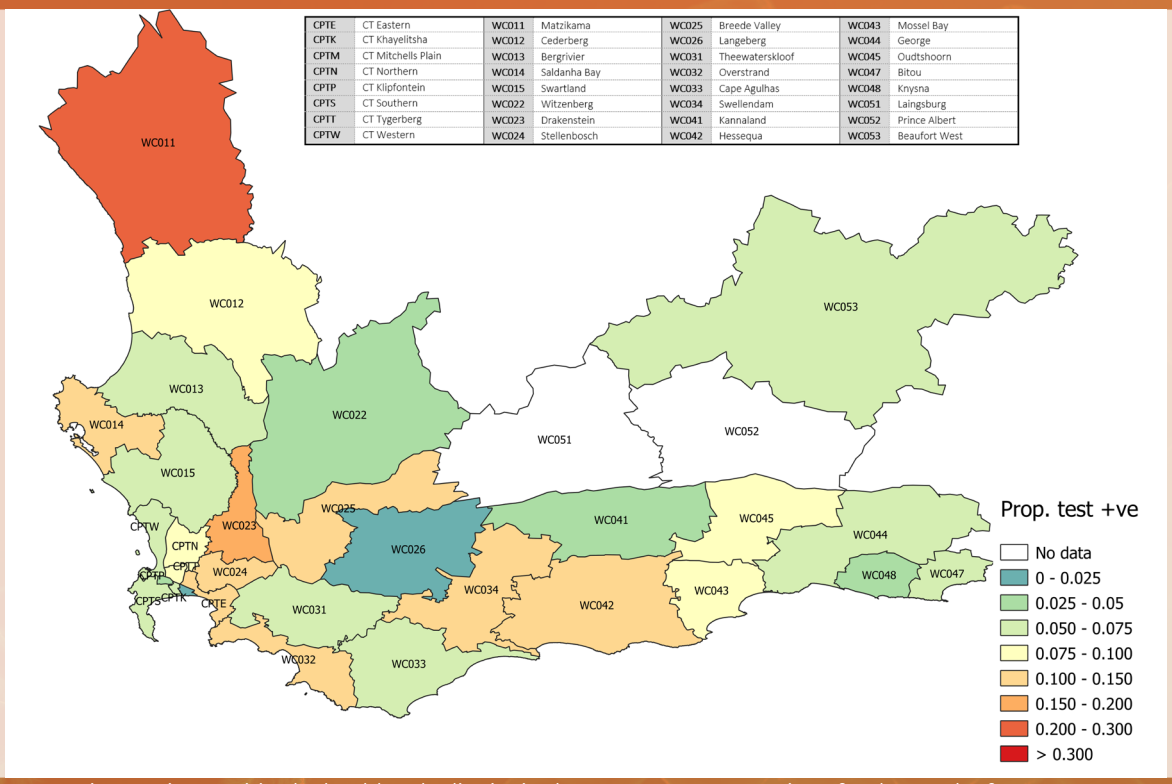

Figure 11. Proportion testing positive by health sub-district in the Western Cape Province for the week of 30 May – 5 June 2021. Areas shaded white represent districts in which either (i) no tests were reported, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%

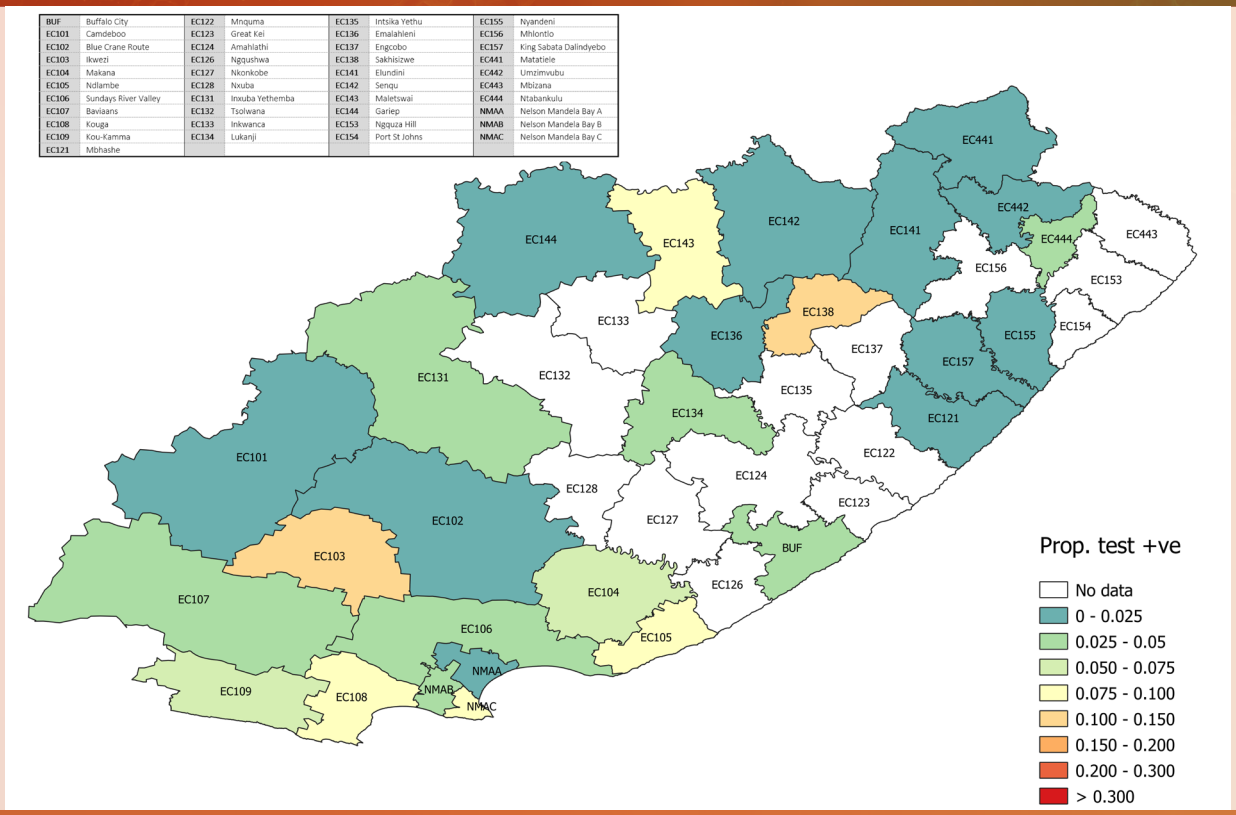

Figure 12. Proportion testing positive by health sub-district in the Eastern Cape Province for the week of 30 May – 5 June 2021. Areas shaded white represent districts in which either (i) no tests were reported, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

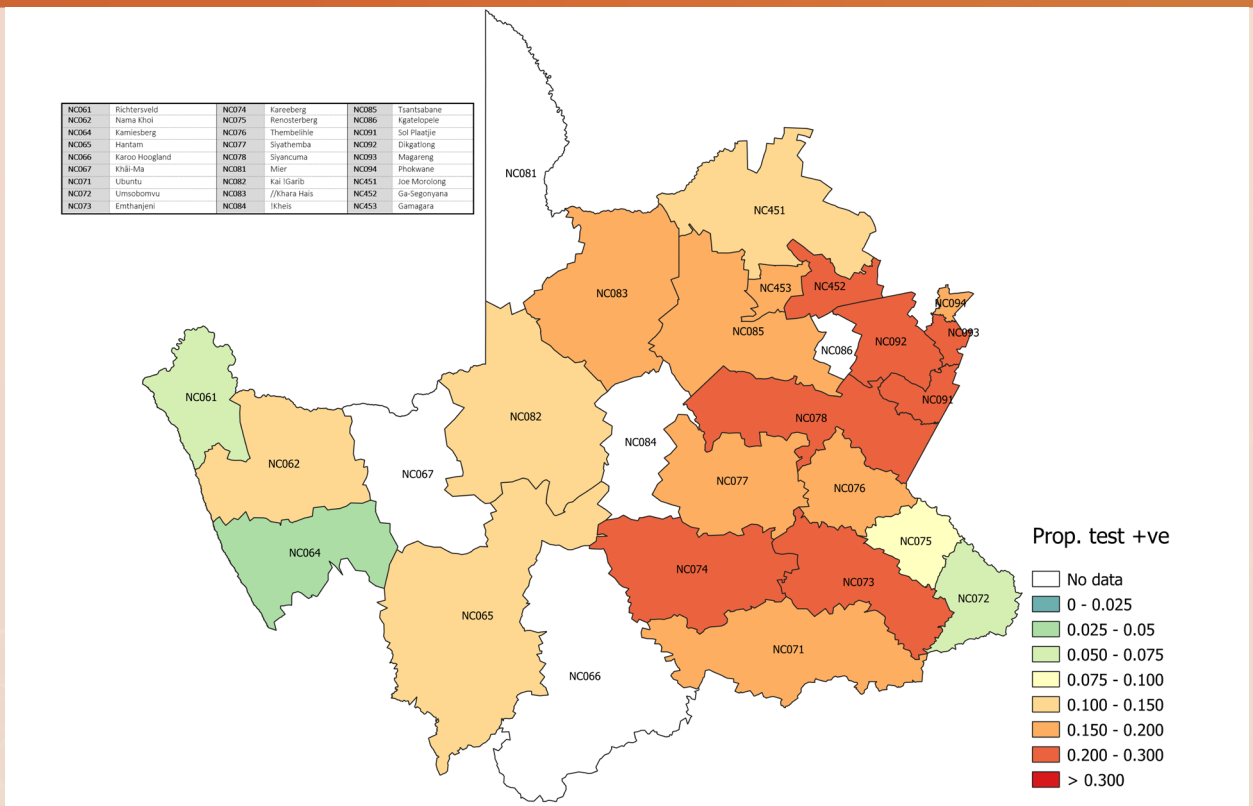

Figure 13. Proportion testing positive by health sub-district in Northern Cape Province for the week of 30 May – 5 June 2021. Areas shaded white represent districts in which either (i) no tests were reported, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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

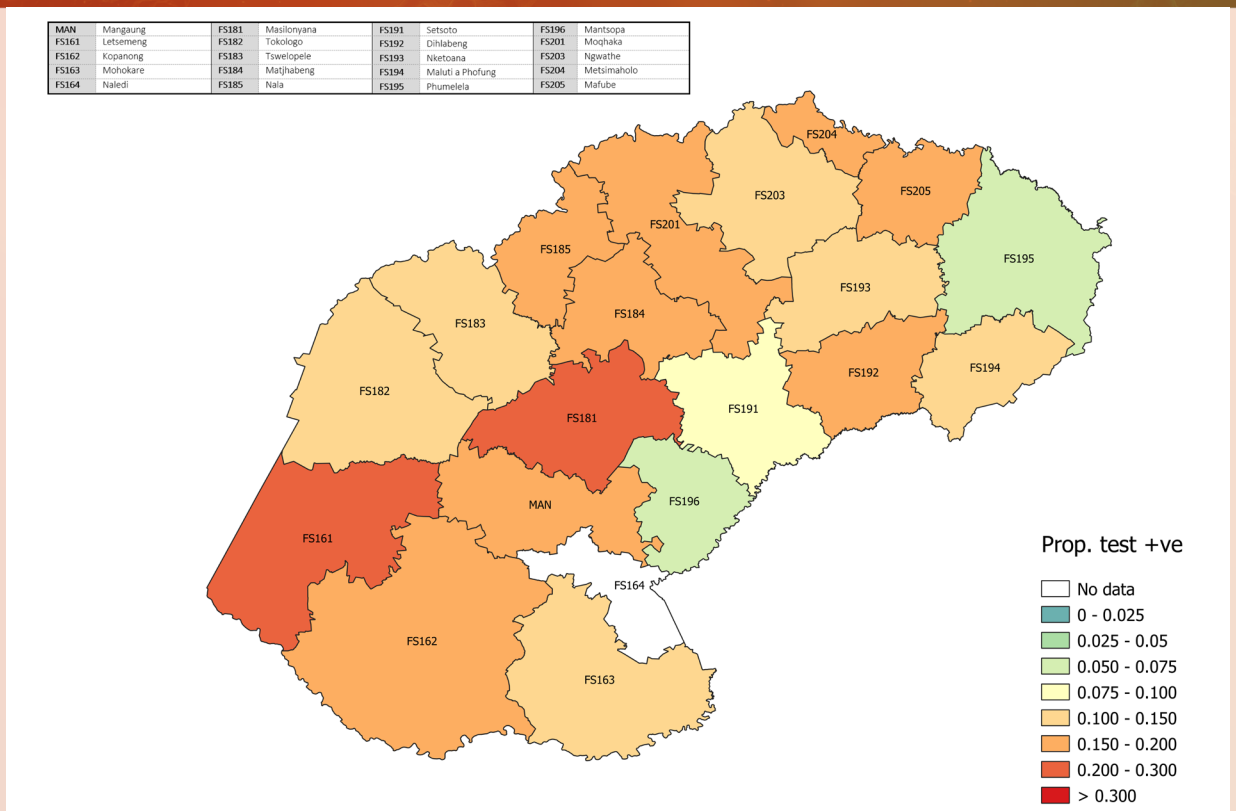

Figure 14. Proportion testing positive by health sub-district in Free State Province for the week of 30 May – 5 June 2021. Areas shaded white represent districts in which either (i) no tests were reported, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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

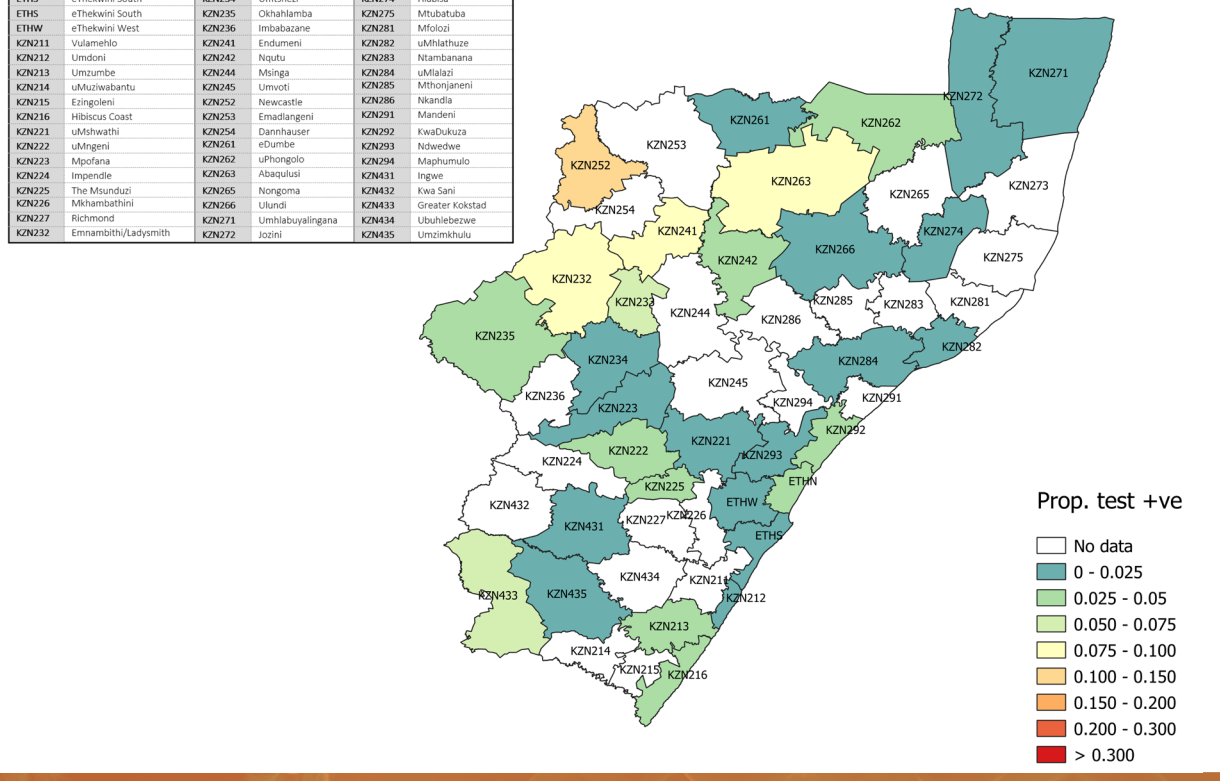

Figure 15. Proportion testing positive by health sub-district in KwaZulu-Natal Province for the week of 30 May – 5 June 2021. Areas shaded white represent districts in which either (i) no tests were reported, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

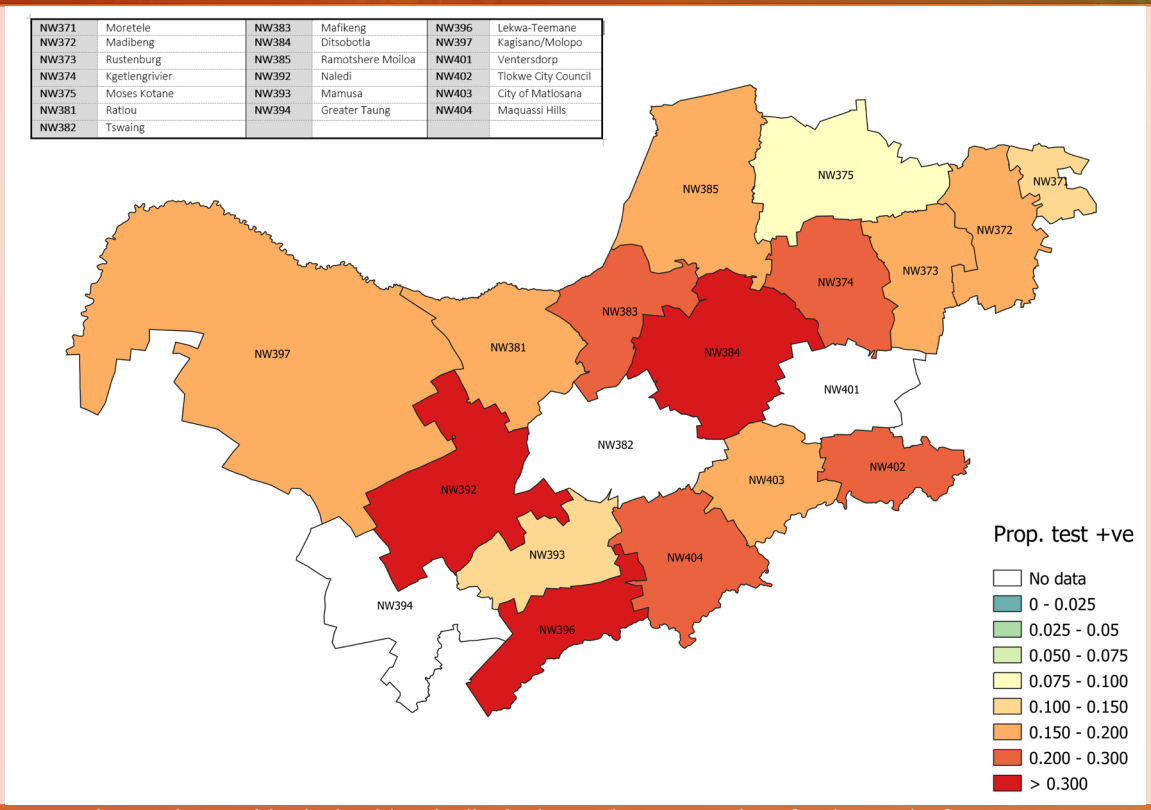

Figure 16. Proportion testing positive by health sub-district in North West Province for the week of 30 May – 5 June 2021. Areas shaded white represent districts in which either (i) no tests were reported, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

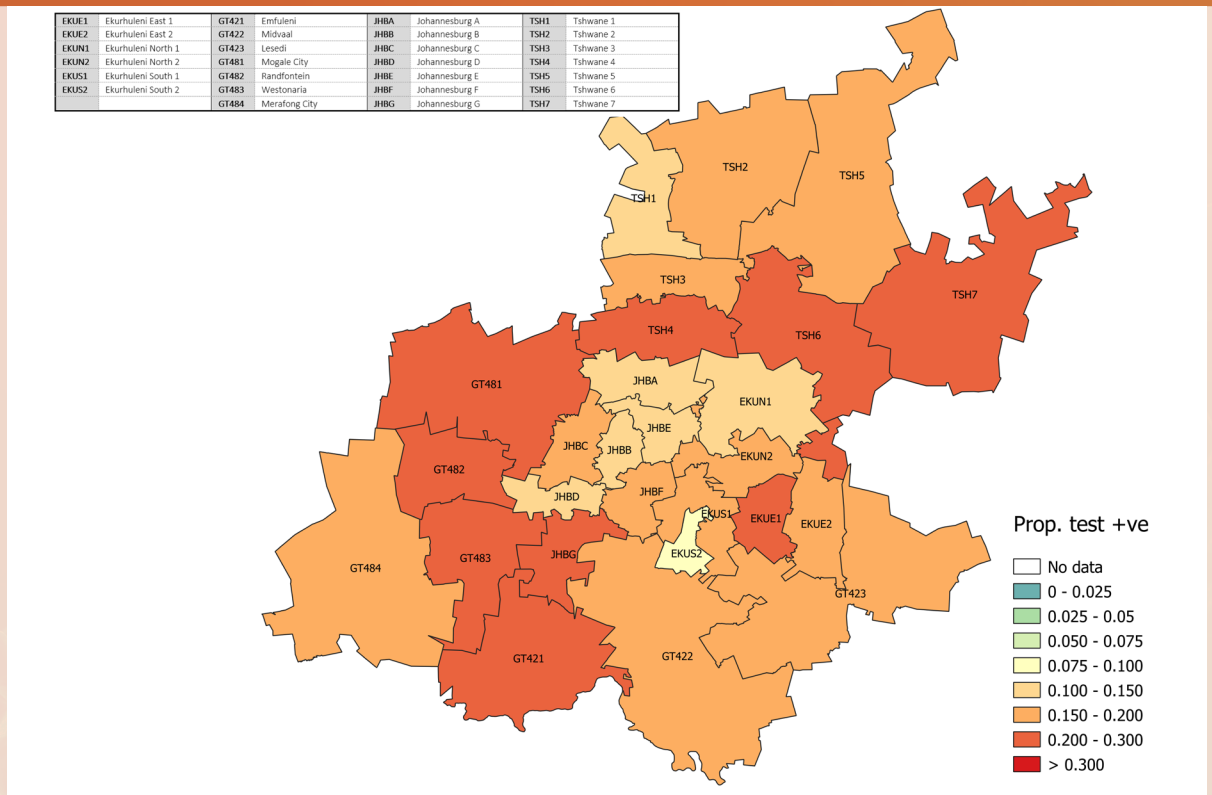

Figure 17. Proportion testing positive by health sub-district in Gauteng Province for the week of 30 May – 5 June 2021. Areas shaded white represent districts in which either (i) no tests were reported, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

MP301	Albert Luthuli	MP307	Govan Mbeki	MP316	Dr JS Moroka
MP302	Msukaligwa	MP311	Victor Khanye	MP321	Thaba Chweu
MP303	Mkhondo	MP312	Emalahleni	MP322	Mbombela
MP304	Pixley Ka Seme	MP313	Steve Tshwete	MP323	Umjindi
MP305	Lekwa	MP314	Emakhazeni	MP324	Nkomazi
MP306	Dipaleseng	MP315	Thembisile	MP325	Bushbuckridge

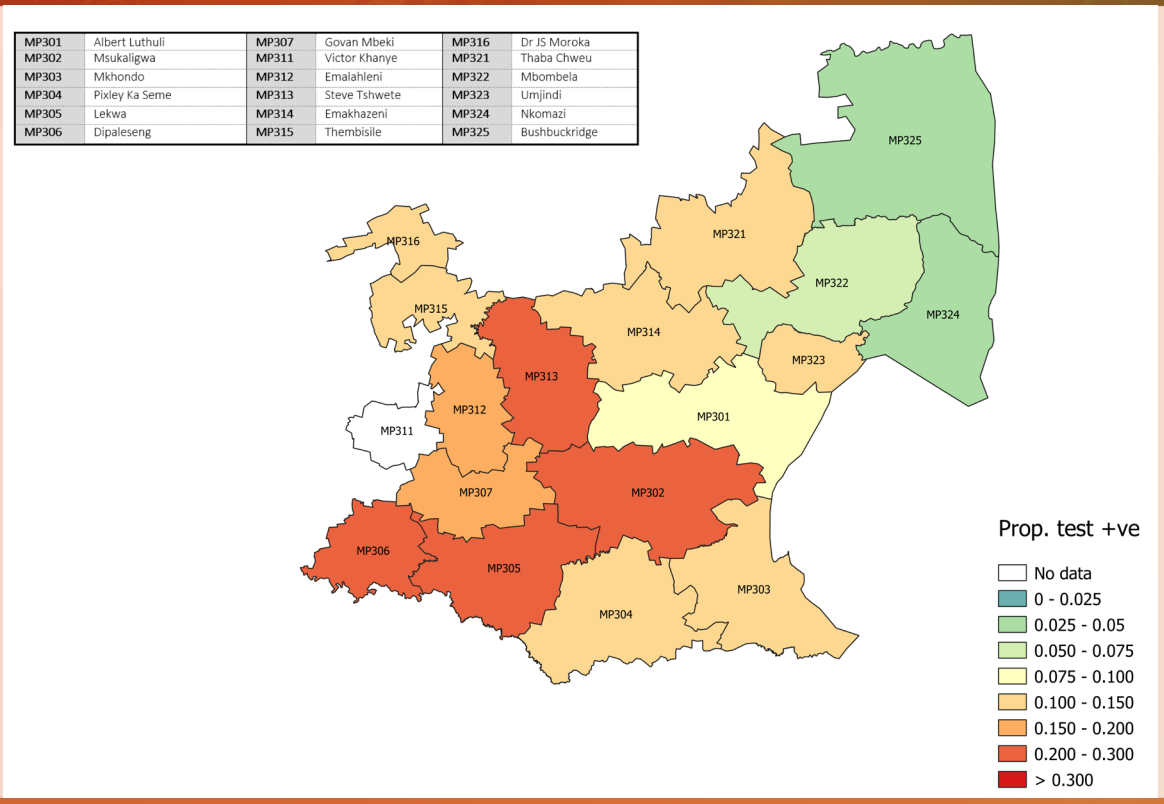

Figure 18. Proportion testing positive by health sub-district in Mpumalanga Province for the week of 30 May – 5 June 2021. Areas shaded white represent districts in which either (i) no tests were reported, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

LIM331	Greater Giyani	LIM351	Blouberg	LIM365	Modimolle
LIM332	Greater Letaba	LIM352	Aganang	LIM366	Bela-Bela
LIM333	Greater Tzaneen	LIM353	Molemole	LIM367	Mogalakwena
LIM334	Ba-Phalaborwa	LIM354	Polokwane	LIM471	Ephraim Mogale
LIM335	Maruleng	LIM355	Lepele-Nkumpi	LIM472	Elias Motsoaledi
LIM341	Musina	LIM361	Thabazimbi	LIM473	Makhuduthamaga
LIM342	Mutale	LIM362	Lephalale	LIM474	Fetakgomo
LIM343	Thulamela	LIM364	Mookgopong	LIM475	Greater Tubatse
LIM344	Makhado				

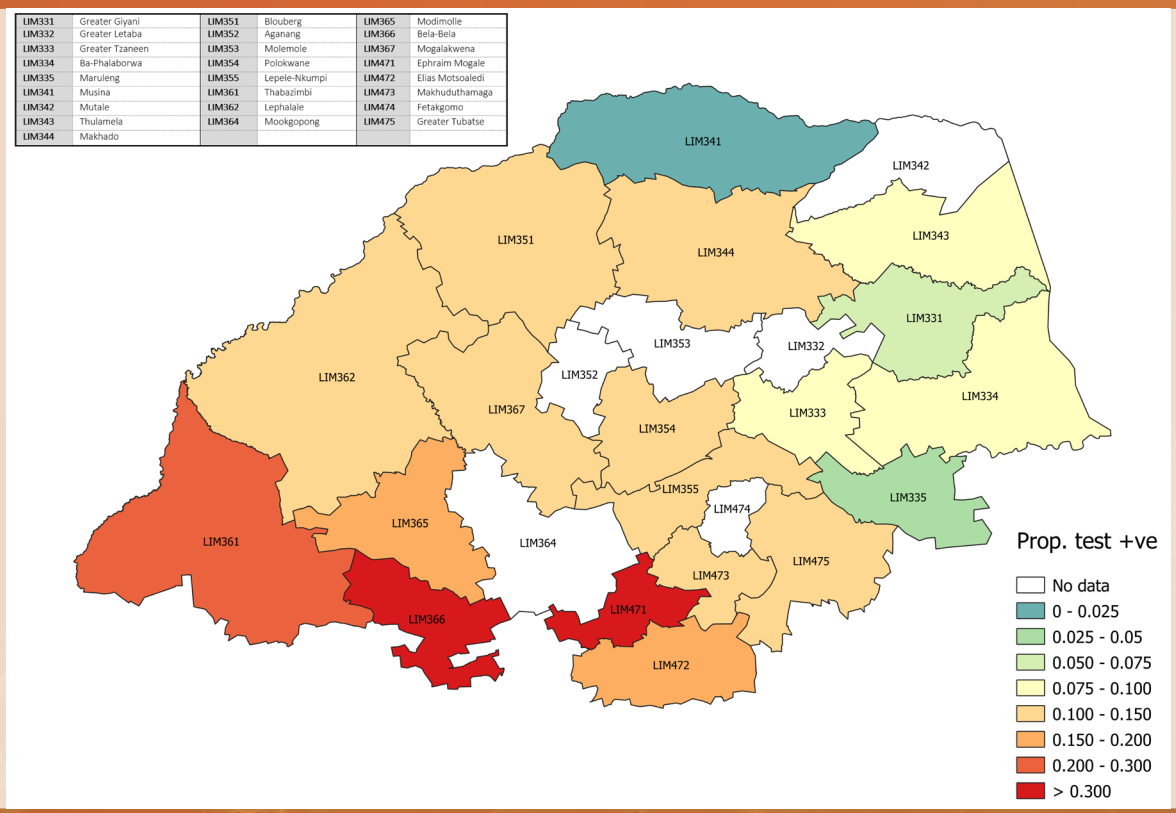

Figure 19. Proportion testing positive by health sub-district in Limpopo Province for the week of 30 May – 5 June 2021. Areas shaded white represent districts in which either (i) no tests were reported, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

Testing by patient admission status

In week 22 of 2021, 36.4% of reported tests were for hospitalised patients; 49.4% in the public sector and 27.9% in the private sector (Figure 20). The percentage testing positive in week 22 was higher among outpatients (15.7%) compared to inpatients (10.1%), with increases observed in both groups (Figure 21). In week 22 the mean laboratory turnaround time for PCR tests in the public sector was higher amongst outpatients (2.5 days) than inpatients (1.4 days) (Figure 22).

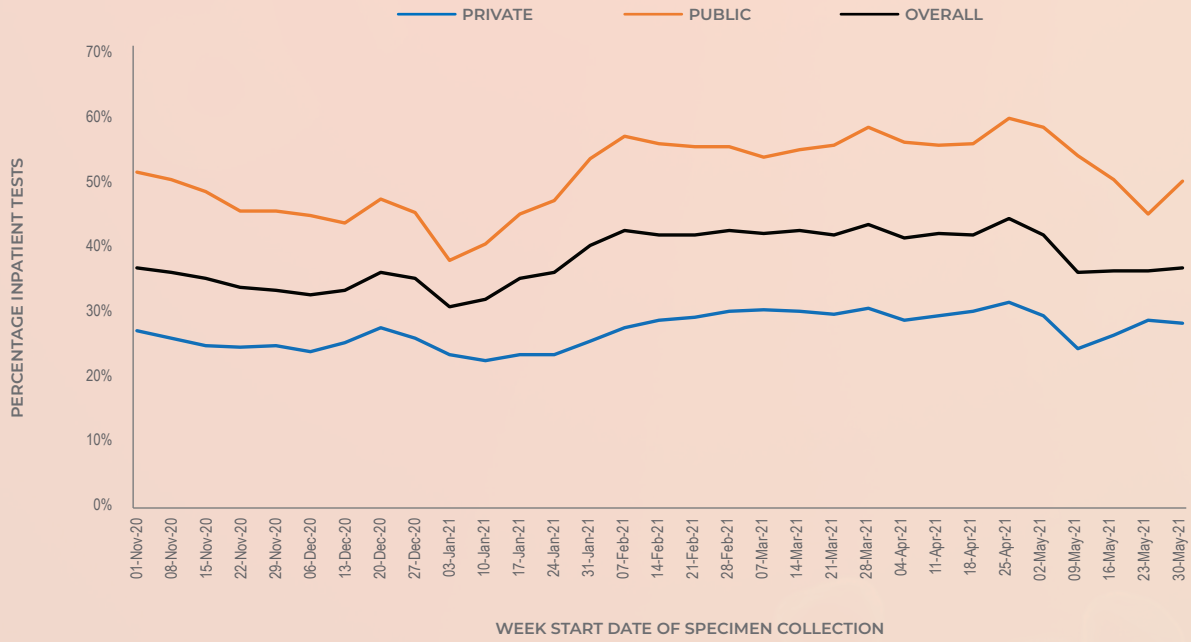

Figure 20. Percentage of inpatient tests reported by health sector, 1 November 2020 – 5 June 2021

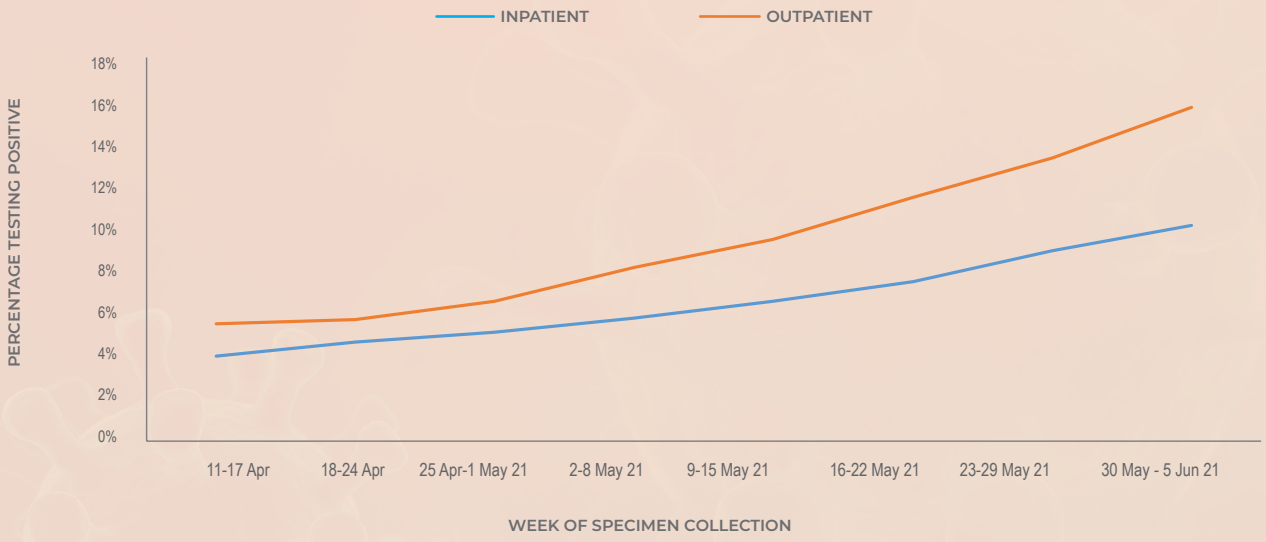

Figure 21. Percentage testing positive by patient admission status, 11 April – 5 June 2021

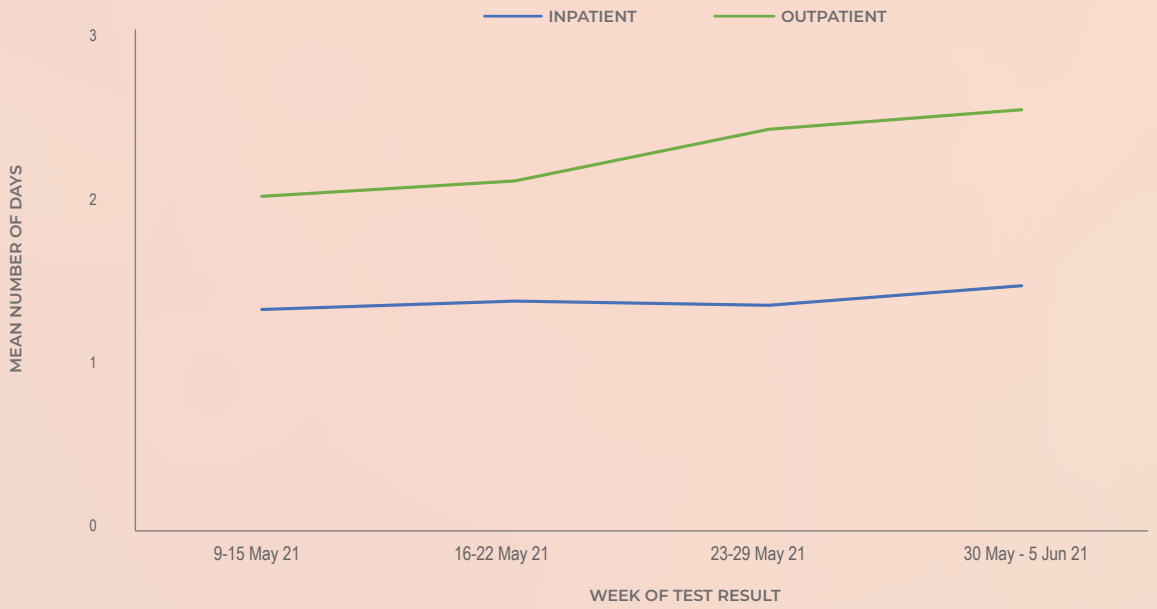

Figure 22. Mean number of days between date of specimen collection and date of test result for PCR tests in the public sector by patient admission status, 9 May – 5 June 2021

Testing by age and sex

The mean age of individuals tested in week 22 of 2021 was 38.8 years, and was similar among males (38.9 years) and females (38.7 years). The majority of reported tests (56.0%) were in individuals in the 20-49 years' age group, with an additional peak in the 50-54 year age group (Figure 23). In week 22, the testing rate was higher in females (415 per 100,000 persons) than in males (392 per 100,000 persons) (Figure 24). Testing rates in week 22 were highest in the 80+ age group (834 per 100,000 persons). The percentage testing positive was highest in individuals aged 65-69 (18.0%) and 75-79 years (17.7%). Among younger individuals a high percentage testing positive was observed in the 15-19 year age group (16.5%). In males, the percentage testing positive was highest in individuals aged 75-79 years (18.4%). In females, the highest percentage testing positive was observed in individuals aged 65-69 years (18.6%).

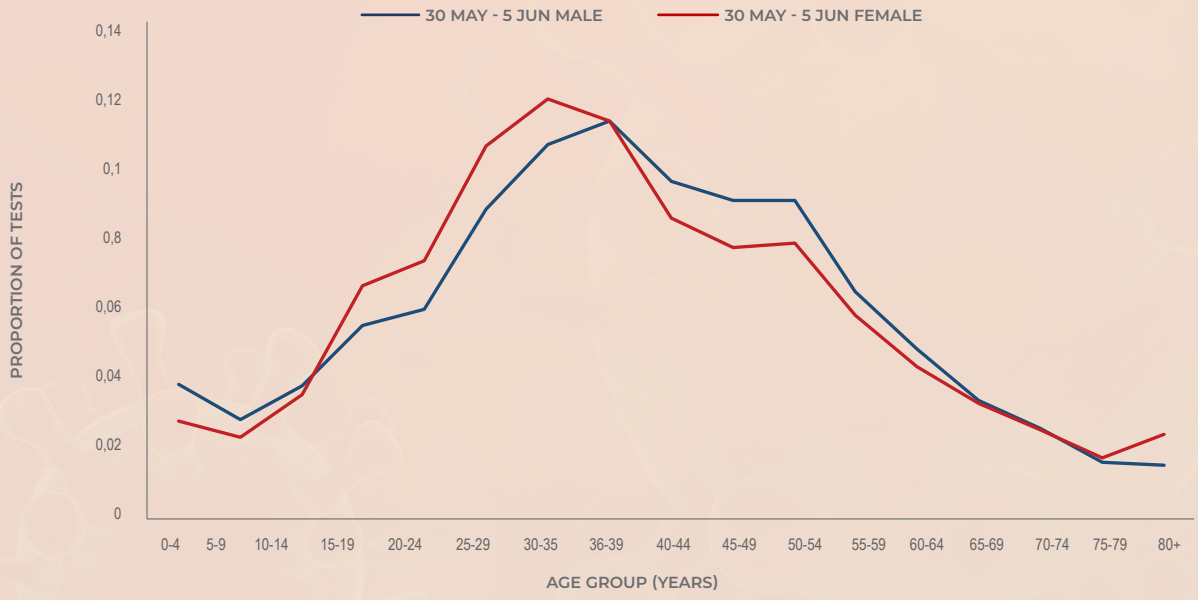

Figure 23. Proportion of tests by age group and sex, South Africa, week 22, 30 May – 5 June 2021

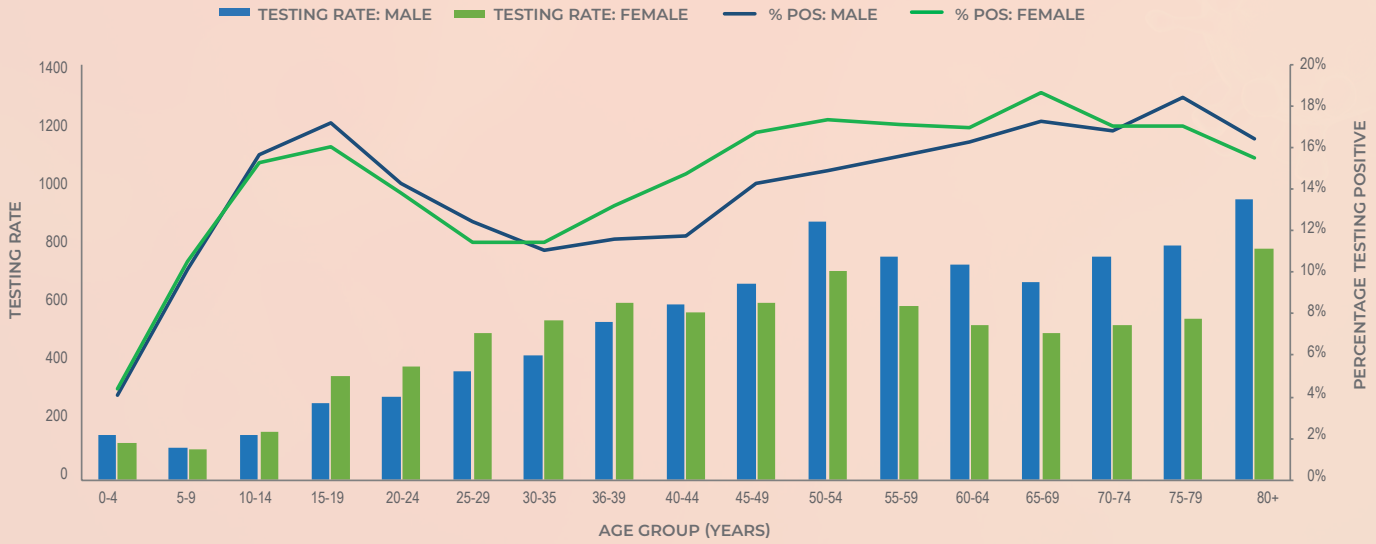

Figure 24. Testing rates per 100,000 persons and percentage testing positive by age group and sex, South Africa, week 22, 30 May – 5 June 2021

Testing by test type

Up to the end of week 22 of 2021, 8.7% (1,033,213/11,817,863) of all reported tests were antigen tests. In week 22, 14.6% (35,807/245,455) of reported tests were antigen tests (Figure 25). Overall, 79.2% of antigen tests have been performed in the public sector and in week 22 the public sector accounted for 77.8% (27,840/35,807) of antigen tests. Since antigen testing began in November 2020, the majority of antigen tests have been reported from KwaZulu-Natal (40.7%), Gauteng (14.0%) and Eastern Cape (12.1%) provinces. In the past few weeks, KwaZulu-Natal and Gauteng have performed the highest weekly number of antigen tests. The percentage testing positive was higher for PCR tests compared to antigen tests, and in week 22 it was 15.0% for PCR tests and 6.8% for antigen tests (Figure 26). The mean turnaround time for antigen tests reported in week 22 increased to 3.6 days in the public sector and remained at 0.1 day in the private sector (Figure 27). The number of antigen tests reported is likely underestimated as antigen tests are increasingly being used outside of laboratory settings and results may not be reported.

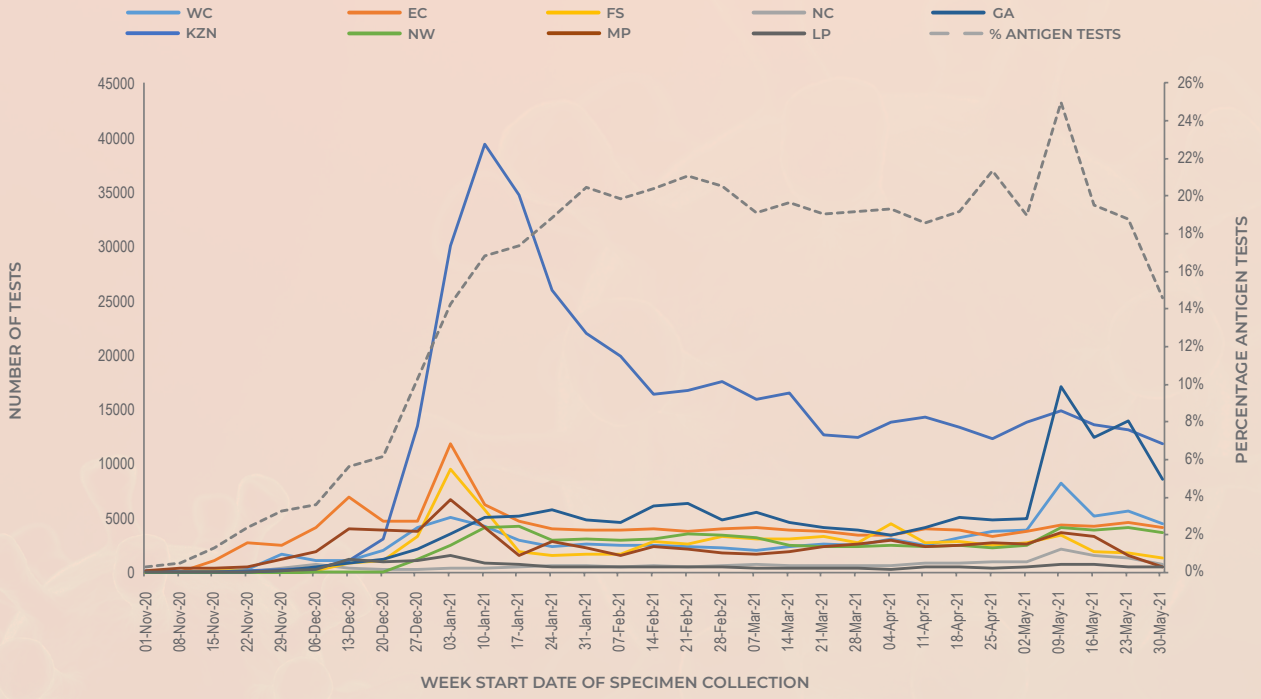

Figure 25. Number of antigen tests by province, and overall percentage antigen tests, South Africa, 1 November 2020 – 5 June 2021. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GT, Gauteng; NC, Northern Cape; NW, North West; MP, Mpumalanga; LP, Limpopo

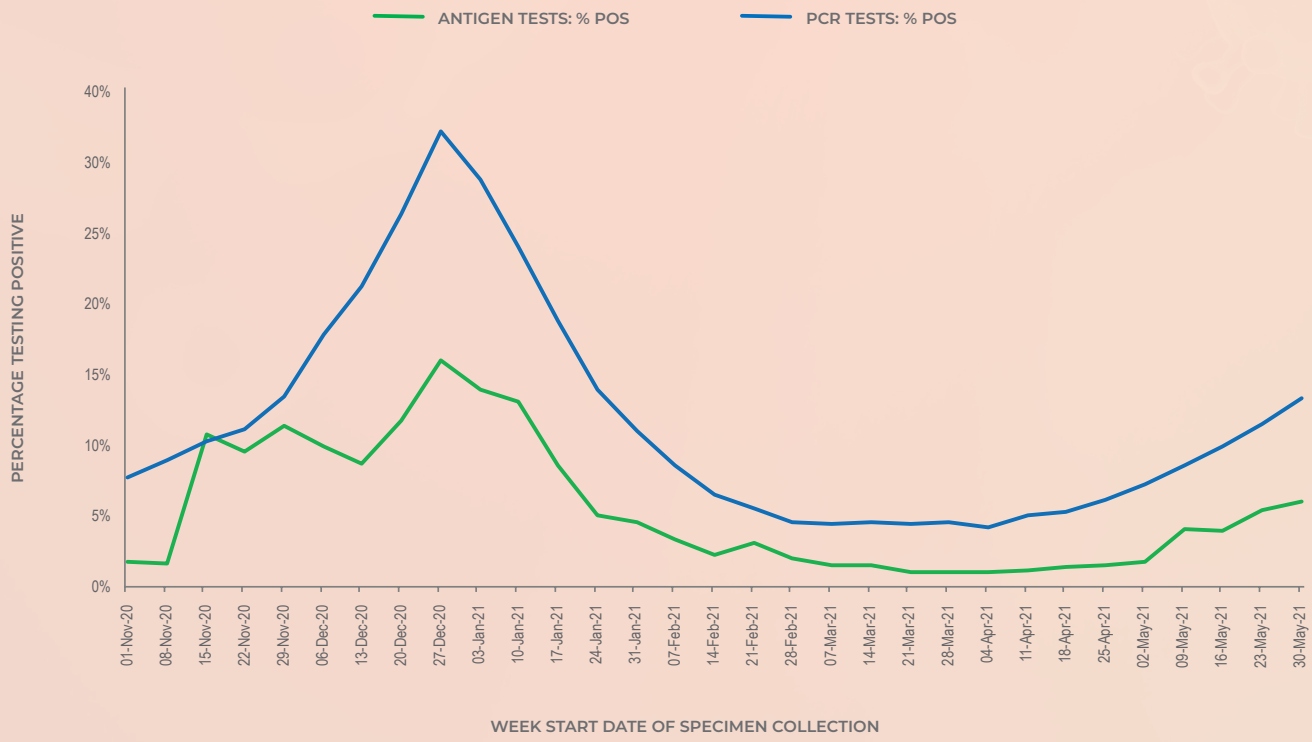

Figure 26. Percentage of laboratory tests positive for SARS-CoV-2 by test type and date of specimen collection, South Africa, 1 November 2020 – 5 June 2021

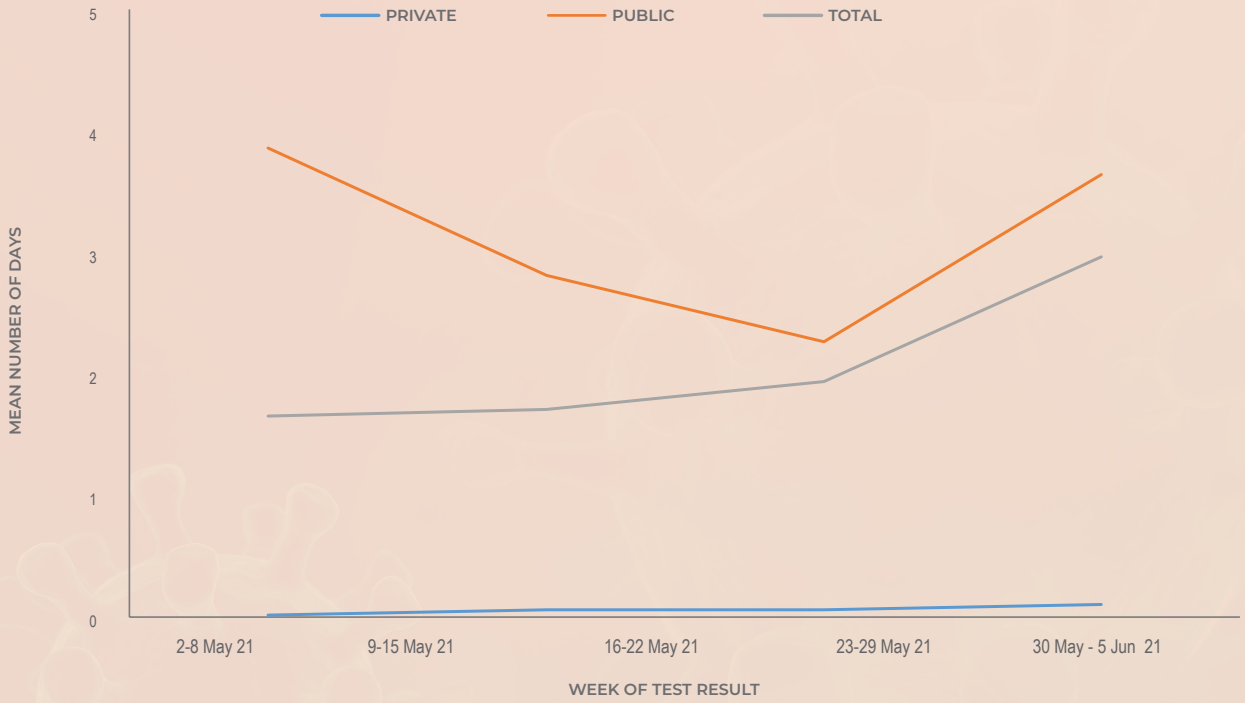

Figure 27. Mean number of days between date of specimen collection and date of test result for antigen tests, by week of test result, South Africa, 9 May- 5 June 2021

Limitations

- A backlog in testing of samples by laboratories affects the reported number of tests. 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 and number of reported tests 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

The number of tests reported in week 22 (n=245,455) was similar to the previous three weeks. Gauteng (42.4%), Western Cape (15.0%) and KwaZulu-Natal (13.1%) provinces reported the largest number of tests in week 22. The overall testing rate in week 22 was 412 per 100,000 persons; highest in the Northern Cape (703 per 100,000 persons) and lowest in Limpopo (98 per 100,000 persons). Testing rates decreased in the Free State and Northern Cape provinces. Antigen tests accounted for 14.6% (35,807/245,455) of all tests reported in week 22, however the number of antigen tests is likely underestimated due to under-reporting and delayed reporting of antigen tests. The overall mean laboratory turnaround time for PCR tests was 1.1 days in week 22; 2.0 days in the public sector and 0.7 days in the private sector.

The percentage testing positive continues to increase and in week 22 of 2021, the percentage testing positive was 13.8%, which increased by 2.0% compared to the previous week. The percentage testing positive in week 22 was highest in the Northern Cape (21.0%), North West (19.0%), Gauteng (18.0%) and Free State (17.4%) provinces. The percentage testing positive was between 10% and 15% in Mpumalanga and Limpopo, and was less than 10% in Western Cape, Eastern Cape and KwaZulu-Natal. Compared to the previous week, the percentage testing positive in week 22 increased the Western Cape, Eastern Cape, KwaZulu-Natal, Gauteng, North West, Mpumalanga and Limpopo provinces. The percentage testing positive decreased in the Northern Cape and Free State provinces.