

COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 12 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 March 2021 (Week 12 of 2021).

HIGHLIGHTS

- In the period 1 March 2020 through 27 March 2021, 9,737,012 PCR and antigen tests for SARS-CoV-2 have been performed nationally.
- The number of tests performed in week 12 of 2021 (n=156,131) was similar to the previous few weeks.
- The testing rate in week 12 was 262 per 100,000 persons; highest in the Western Cape (400 per 100,000 persons) and lowest in Limpopo (64 per 100,000 persons).
- In week 12 the percentage testing positive was 4.4%, which was slightly lower than the previous week.
- The percentage testing positive in week 12 was highest in the Northern Cape (10.0%) and Mpumalanga (9.3%) provinces. The percentage testing positive ranged from 5% to 9% in the Free State, North West and Limpopo, and was <5% in the Western Cape, Eastern Cape, KwaZulu-Natal, and Gauteng.
- In week 12, compared to the previous week, the percentage testing positive increased in the Free State province, decreased in KwaZulu-Natal, and was unchanged in the Western Cape, Eastern Cape, Northern Cape, North West, Gauteng, Mpumalanga and Limpopo.
- Mean laboratory turnaround time of PCR tests in week 12 was 1.2 days; 1.5 days in the public sector and 1.0 day in the private sector.

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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 (NMCCSS). 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 conducted between 1 March 2020 (week 10 of 2020), the week when the first case of COVID-19 was confirmed, and 27 March 2021 (week 12 of 2021).

Testing volumes and proportion testing positive

From 1 March 2020 through 27 March 2021, 9,737,012 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=307,909), and subsequently decreased. Weekly testing volumes increased again from week 48 (beginning 22 November 2020), with the highest weekly number of tests since the start of the pandemic performed in week 1 of 2021 (n=498,527). In week 12 of 2021, 156,131 tests were performed. Weekly testing volumes have remained relatively consistent since week 6 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).

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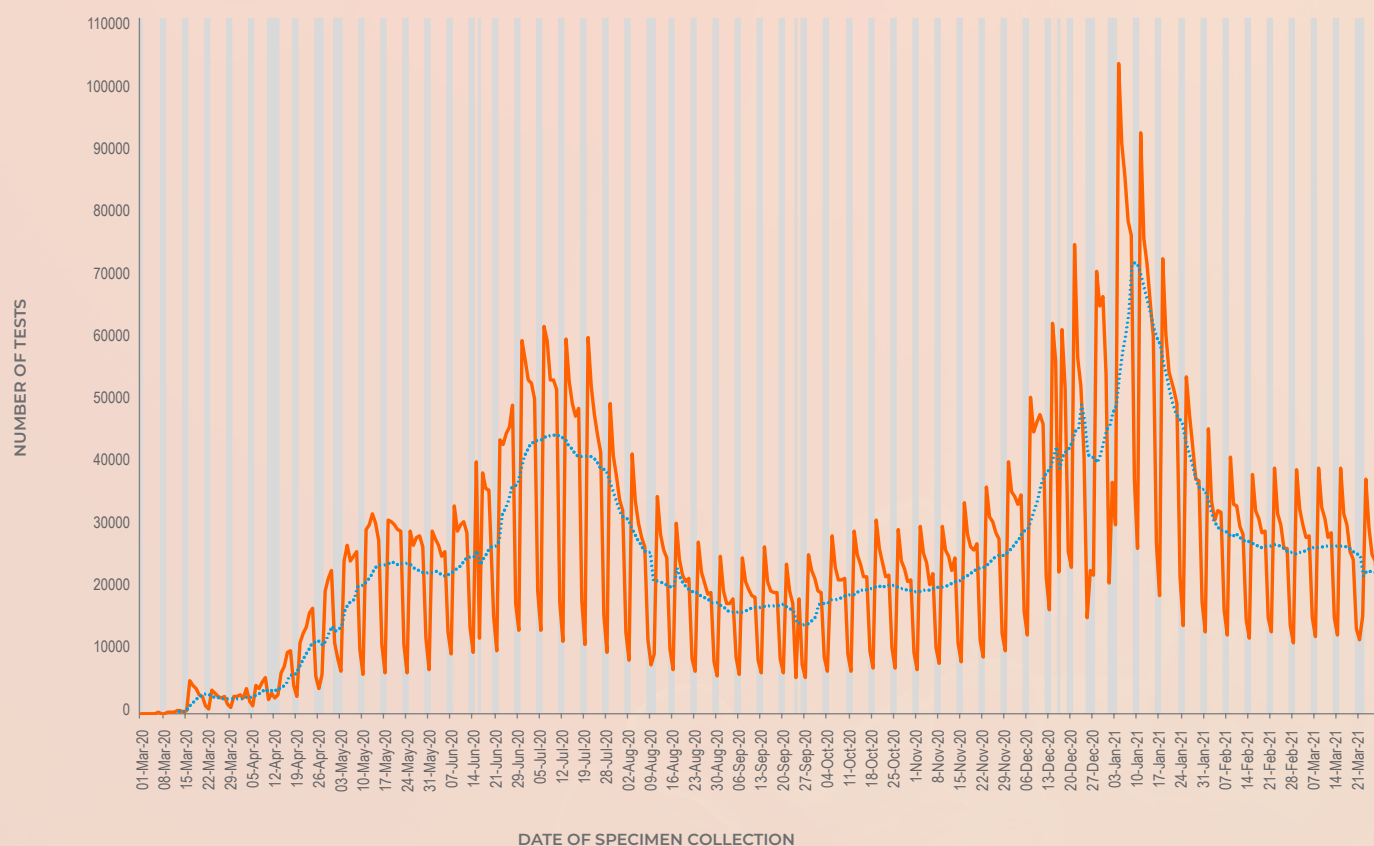


Figure 1. Number of laboratory tests conducted by date of specimen collection, South Africa, 1 March 2020 – 27 March 2021. Blue dotted line shows the 7-day moving average of the number of tests conducted. Grey bars highlight weekend days and public holidays.

The overall percentage testing positive from week 10 of 2020 through week 12 of 2021 was 16.7% (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 12 of 2021 was 4.4%, slightly lower than the previous week (4.5%, $P=0.030$) (Figure 2).

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Table 1. Weekly number of tests conducted and positive tests, South Africa, 1 March 2020 – 27 March 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 (0.2)	544	3.1
14	29-Mar-20	18246 (0.2)	520	2.8
15	05-Apr-20	26298 (0.3)	796	3.0
16	12-Apr-20	43749 (0.4)	1295	3.0
17	19-Apr-20	79174 (0.8)	2177	2.7
18	26-Apr-20	93810 (1.0)	3205	3.4
19	03-May-20	142706 (1.5)	6018	4.2
20	10-May-20	165374 (1.7)	8092	4.9
21	17-May-20	166542 (1.7)	11379	6.8
22	24-May-20	156136 (1.6)	12967	8.3
23	31-May-20	153566 (1.6)	15079	9.8
24	07-Jun-20	173899 (1.8)	22359	12.9
25	14-Jun-20	186076 (1.9)	32649	17.5
26	21-Jun-20	252088 (2.6)	55047	21.8
27	28-Jun-20	302738 (3.1)	75308	24.9
28	05-Jul-20	307909 (3.2)	86035	27.9
29	12-Jul-20	285596 (2.9)	84926	29.7
30	19-Jul-20	270889 (2.8)	78634	29.0
31	26-Jul-20	216389 (2.2)	58393	27.0
32	02-Aug-20	179566 (1.8)	40994	22.8
33	09-Aug-20	141102 (1.4)	26265	18.6
34	16-Aug-20	135010 (1.4)	21377	15.8
35	23-Aug-20	123331 (1.3)	16330	13.2
36	30-Aug-20	112760 (1.2)	12790	11.3
37	06-Sep-20	116995 (1.2)	11953	10.2
38	13-Sep-20	120710 (1.2)	12011	10.0
39	20-Sep-20	98817 (1.0)	10098	10.2
40	27-Sep-20	123059 (1.3)	11008	8.9
41	04-Oct-20	131040 (1.3)	11777	9.0
42	11-Oct-20	137966 (1.4)	12077	8.8
43	18-Oct-20	142159 (1.5)	12066	8.5
44	25-Oct-20	135844 (1.4)	11478	8.4
45	01-Nov-20	138813 (1.4)	12134	8.7
46	08-Nov-20	146998 (1.5)	14844	10.1
47	15-Nov-20	160636 (1.6)	18761	11.7
48	22-Nov-20	175682 (1.8)	22051	12.6
49	29-Nov-20	203133 (2.1)	30766	15.1
50	06-Dec-20	267871 (2.8)	53310	19.9
51	13-Dec-20	294267 (3.0)	68565	23.3
52	20-Dec-20	284137 (2.9)	81937	28.8
53	27-Dec-20	333413 (3.4)	115666	34.7
1	03-Jan-21	498527 (5.1)	150667	30.2
2	10-Jan-21	415878 (4.3)	104589	25.1
3	17-Jan-21	326377 (3.4)	63175	19.4
4	24-Jan-21	248623 (2.6)	34598	13.9
5	31-Jan-21	202485 (2.1)	22297	11.0
6	07-Feb-21	191673 (2.0)	16426	8.6
7	14-Feb-21	185502 (1.9)	12102	6.5
8	21-Feb-21	179598 (1.8)	10335	5.8
9	28-Feb-21	183303 (1.9)	8634	4.7
10	07-Mar-21	186107 (1.9)	8257	4.4
11	14-Mar-21	176367 (1.8)	8004	4.5
12	21-Mar-21	156131 (1.6)	6842	4.4
Total		9737012 (100.0)	1630620	16.7

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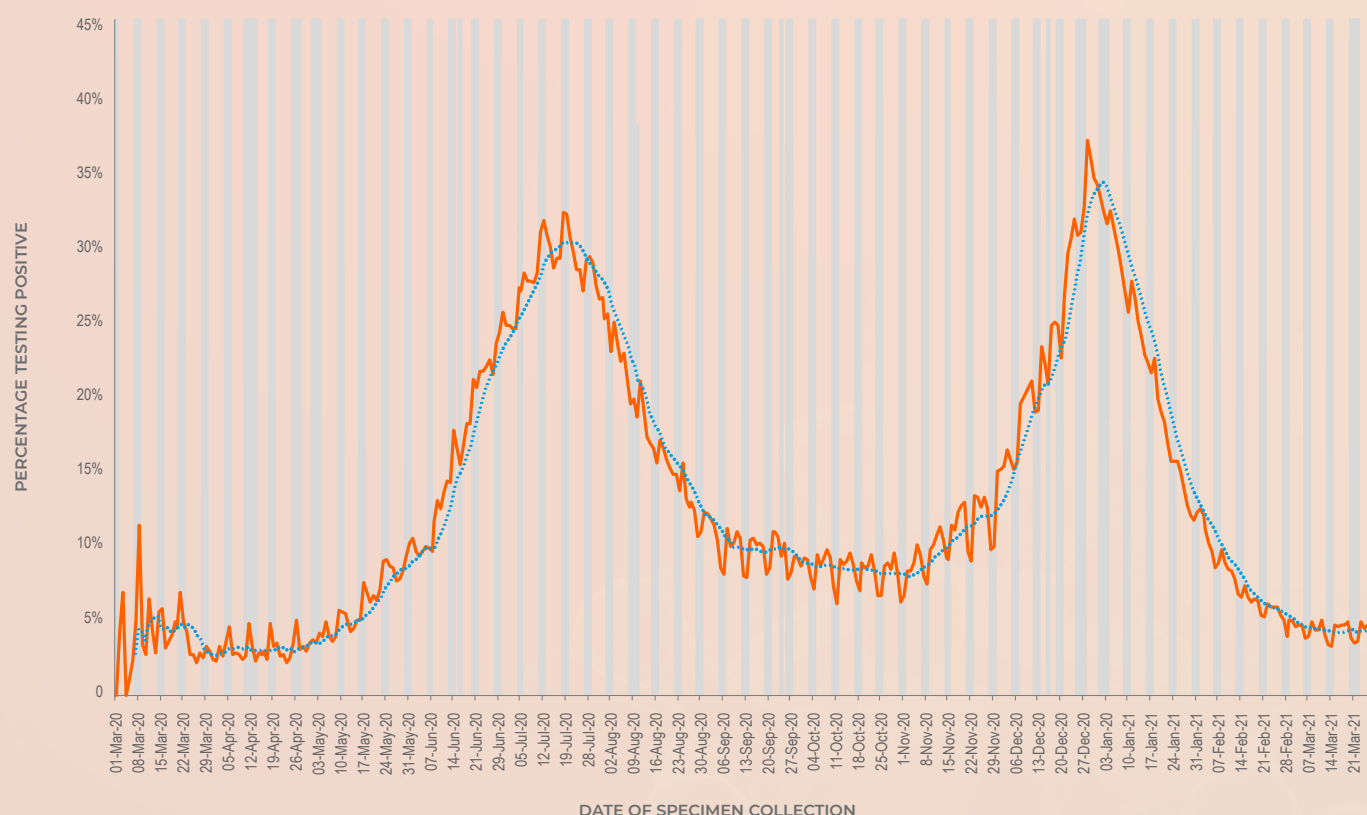


Figure 2. Percentage of laboratory tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March 2020 – 27 March 2021. Blue dotted line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

Testing in private and public sectors

From 1 March 2020 through 27 March 2021, 4,260,510 laboratory tests were conducted in public sector laboratories, with 17.4% testing positive. Over this same period, private sector laboratories conducted 5,476,502 tests, with 16.3% testing positive (Table 2). Overall the public sector has conducted 43.8% of tests and accounted for 45.3% 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 11 to week 12 of 2021, the percentage testing positive decreased slightly in the public sector (5.1% in week

11 and 4.7% in week 12, $P < 0.001$) and was unchanged in the private sector (4.0% in week 11 and 4.2% in week 12, $P = 0.078$). In week 12 of 2021 the percentage testing positive was slightly higher in the public sector (4.7%) compared to the private sector (4.2%) ($P < 0.001$).

The mean turnaround time for PCR tests performed in week 12 of 2021 was 1.2 days; 1.5 days in the public sector and 1.0 day in the private sector (Figure 3). Turnaround times for public sector tests were ≤ 2 days in all provinces in week 12 (Figure 4). Twenty-four of the 28 (85.7%) NHLS laboratories performing PCR testing for SARS-CoV-2 had turnaround times ≤ 2 days in week 12 (Figure 5).

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

Week number	Week beginning	Public sector		Private sector		Public sector percentage of		Ratio of PTP ^a
		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)	12378	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	94338	4507 (4.8)	48368	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)	67894	4348 (6.4)	59.2	61.8	1.113
22	24-May-20	77597	6411 (8.3)	78539	6556 (8.3)	49.7	49.4	0.990
23	31-May-20	63944	6626 (10.4)	89622	8453 (9.4)	41.6	43.9	1.099
24	07-Jun-20	64654	8038 (12.4)	109245	14321 (13.1)	37.2	35.9	0.948
25	14-Jun-20	61149	11982 (19.6)	124927	20667 (16.5)	32.9	36.7	1.184
26	21-Jun-20	90453	20425 (22.6)	161635	34622 (21.4)	35.9	37.1	1.054
27	28-Jun-20	106370	27244 (25.6)	196368	48064 (24.5)	35.1	36.2	1.046
28	05-Jul-20	117726	32238 (27.4)	190183	53797 (28.3)	38.2	37.5	0.968
29	12-Jul-20	110663	31383 (28.4)	174933	53543 (30.6)	38.7	37.0	0.927
30	19-Jul-20	105213	30319 (28.8)	165676	48315 (29.2)	38.8	38.6	0.988
31	26-Jul-20	81245	22782 (28.0)	135144	35611 (26.4)	37.5	39.0	1.064
32	02-Aug-20	70566	16996 (24.1)	109000	23998 (22.0)	39.3	41.5	1.094
33	09-Aug-20	58661	11172 (19.0)	82441	15093 (18.3)	41.6	42.5	1.040
34	16-Aug-20	56138	9621 (17.1)	78872	11756 (14.9)	41.6	45.0	1.150
35	23-Aug-20	50319	7790 (15.5)	73012	8540 (11.7)	40.8	47.7	1.324
36	30-Aug-20	45421	6096 (13.4)	67339	6694 (9.9)	40.3	47.7	1.350
37	06-Sep-20	51055	6421 (12.6)	65940	5532 (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	44841	5530 (12.3)	53976	4568 (8.5)	45.4	54.8	1.457
40	27-Sep-20	48628	5568 (11.5)	74431	5440 (7.3)	39.5	50.6	1.567
41	04-Oct-20	50433	5688 (11.3)	80607	6089 (7.6)	38.5	48.3	1.493
42	11-Oct-20	53451	5702 (10.7)	84515	6375 (7.5)	38.7	47.2	1.414
43	18-Oct-20	56121	6044 (10.8)	86038	6022 (7.0)	39.5	50.1	1.539
44	25-Oct-20	51284	5721 (11.2)	84560	5757 (6.8)	37.8	49.8	1.639
45	01-Nov-20	52995	6061 (11.4)	85818	6073 (7.1)	38.2	50.0	1.616
46	08-Nov-20	58910	8097 (13.7)	88088	6747 (7.7)	40.1	54.5	1.794
47	15-Nov-20	67580	10584 (15.7)	93056	8177 (8.8)	42.1	56.4	1.782
48	22-Nov-20	74572	12199 (16.4)	101110	9852 (9.7)	42.4	55.3	1.679
49	29-Nov-20	81261	15730 (19.4)	121872	15036 (12.3)	40.0	51.1	1.569
50	06-Dec-20	107879	24715 (22.9)	159992	28595 (17.9)	40.3	46.4	1.282
51	13-Dec-20	117038	29807 (25.5)	177229	38758 (21.9)	39.8	43.5	1.165
52	20-Dec-20	109639	34121 (31.1)	174498	47816 (27.4)	38.6	41.6	1.136
53	27-Dec-20	150723	52874 (35.1)	182690	62792 (34.4)	45.2	45.7	1.021
1	03-Jan-21	234508	70752 (30.2)	264019	79915 (30.3)	47.0	47.0	0.997
2	10-Jan-21	202295	52830 (26.1)	213583	51759 (24.2)	48.6	50.5	1.078
3	17-Jan-21	164778	34397 (20.9)	161599	28778 (17.8)	50.5	54.4	1.172
4	24-Jan-21	122430	18954 (15.5)	126193	15644 (12.4)	49.2	54.8	1.249
5	31-Jan-21	98781	12000 (12.1)	103704	10297 (9.9)	48.8	53.8	1.223
6	07-Feb-21	90307	8456 (9.4)	101366	7970 (7.9)	47.1	51.5	1.191
7	14-Feb-21	83943	6589 (7.8)	101559	5513 (5.4)	45.3	54.4	1.446
8	21-Feb-21	80172	5720 (7.1)	99426	4615 (4.6)	44.6	55.3	1.537
9	28-Feb-21	84509	4612 (5.5)	98794	4022 (4.1)	46.1	53.4	1.341
10	07-Mar-21	88605	4510 (5.1)	97502	3747 (3.8)	47.6	54.6	1.324
11	14-Mar-21	84247	4319 (5.1)	92120	3685 (4.0)	47.8	54.0	1.282
12	21-Mar-21	64751	3038 (4.7)	91380	3804 (4.2)	41.5	44.4	1.127
Total		4260510	739288 (17.4)	5476502	891332 (16.3)	43.8	45.3	1.066

^aRatio 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)

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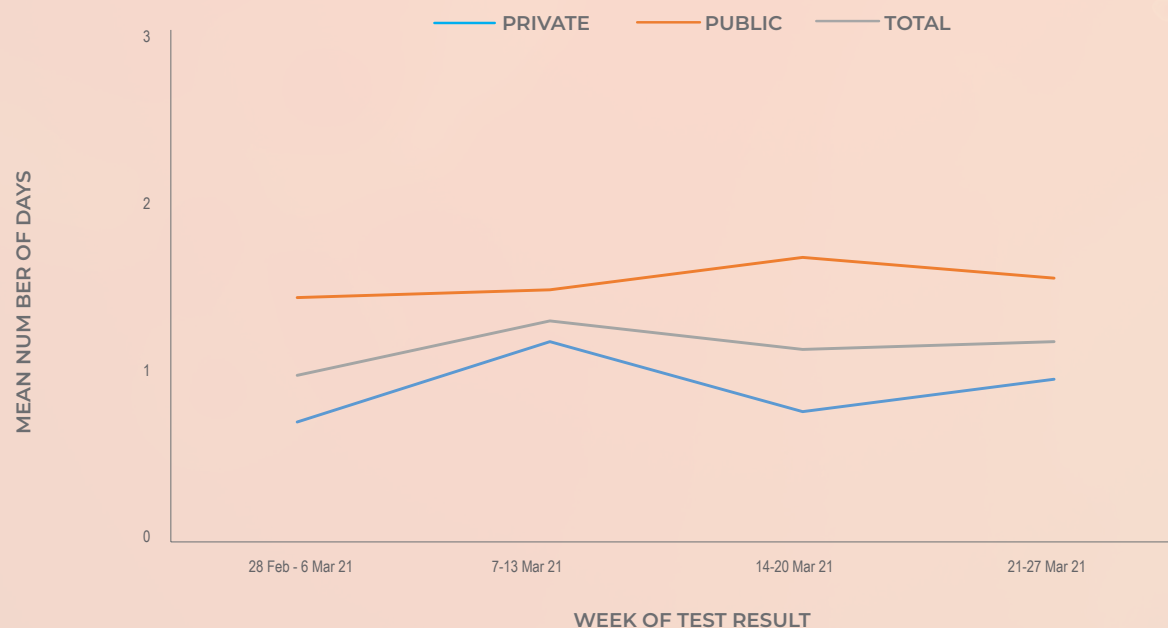


Figure 3. Mean number of days between date of specimen collection and date of test result for PCR tests, by week of test result, South Africa, 28 February – 27 March 2021

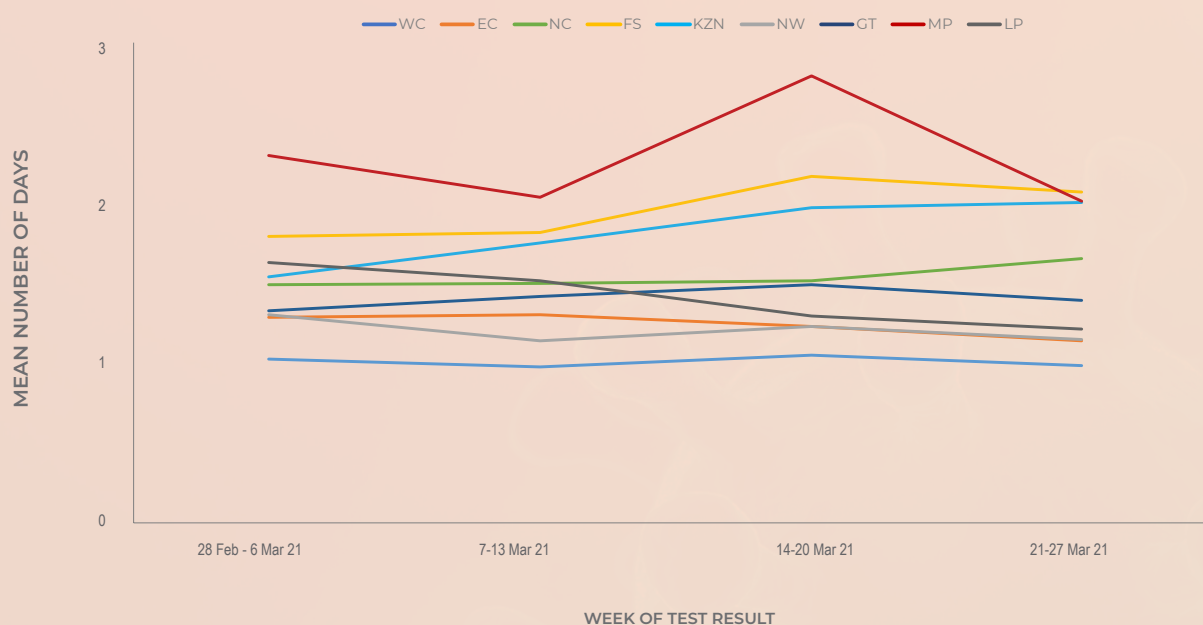


Figure 4. Mean number of days between date of specimen collection and date of test result for PCR tests, by week of test result and province, public sector, South Africa, 28 February – 27 March 2021. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GT, Gauteng; NC, Northern Cape; NW, North West; MP, Mpumalanga; LP, Limpopo

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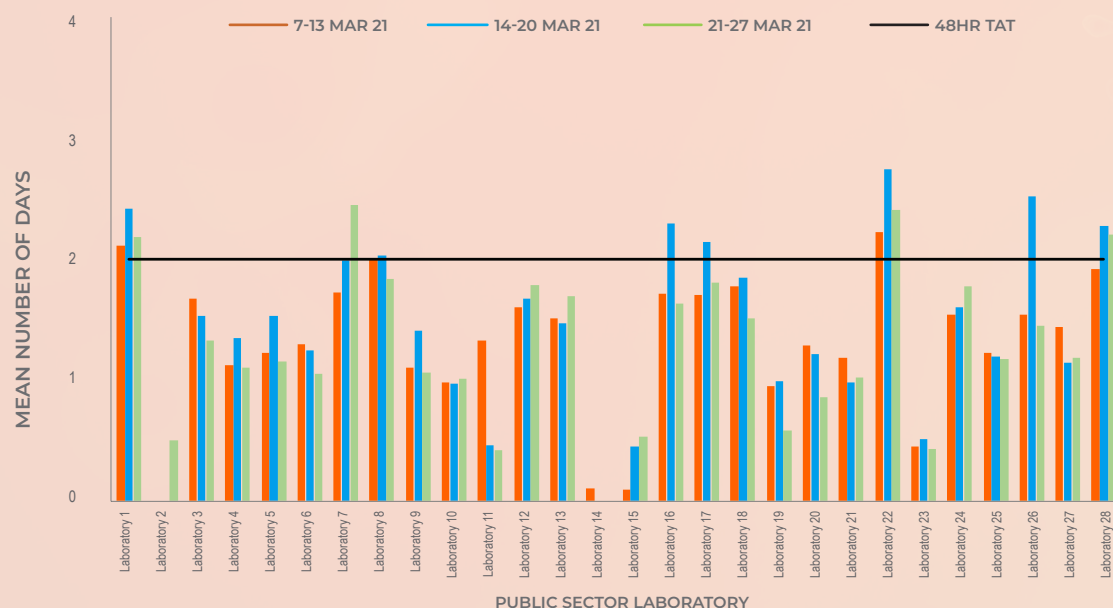


Figure 5. Mean number of days between date of specimen collection and date of test result for PCR tests, by public sector laboratory, 7 - 27 March 2021. The horizontal black line indicates 48-hour turnaround time (TAT).

Testing by province

The majority of tests continued to be performed in Gauteng (33.1%), KwaZulu-Natal (19.9%) and Western Cape (17.9%) provinces in week 12 of 2021 (Table 3). The overall testing rate in week 12 was 262 per 100,000 persons; ranging from 400 per 100,000 persons in the Western Cape to 64 per 100,000 persons in Limpopo (Figure 6). Testing rates have remained relatively consistent since week 4 of 2021. The testing rate increased in the Northern Cape in weeks 10 and 11, but decreased in week 12.

The percentage testing positive in week 12 of 2021 was highest in the Northern Cape (10.0%) and Mpumalanga

(9.3%) provinces (Figure 7 and Table 3). The percentage testing positive ranged from 5% to 9% in the Free State, North West and Limpopo, and was <5% in the Western Cape, Eastern Cape, KwaZulu-Natal, and Gauteng in week 12. Compared to the previous week, the percentage testing positive in week 12 increased in Free State ($P=0.003$) province. The percentage testing positive decreased in KwaZulu-Natal ($P<0.001$), and was unchanged in the Western Cape ($P=0.552$), Eastern Cape ($P=0.454$), Northern Cape ($P=0.101$), North West ($P=0.360$), Gauteng ($P=0.063$), Mpumalanga ($P=0.084$) and Limpopo ($P=0.076$). 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).

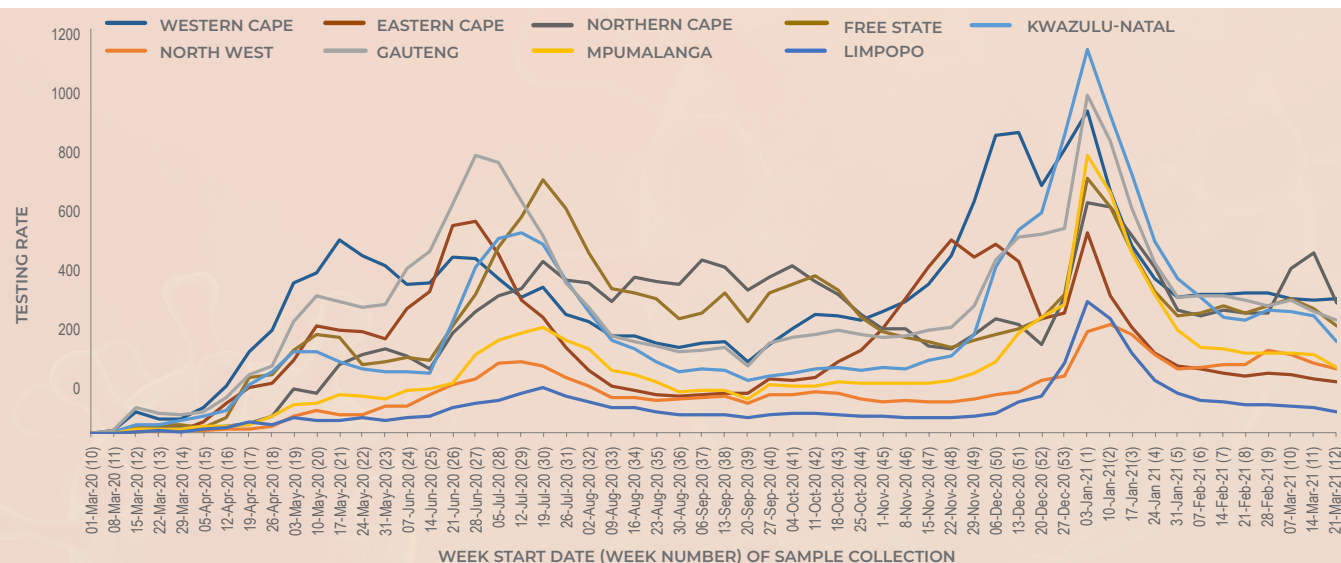


Figure 6. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 March 2020 – 27 March 2021

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

Province	Population ^a	7 - 13 Mar 21		14 - 20 Mar 21		21 - 27 Mar 21		Tests per 100,000 persons	Change in percentage positive ^b
		No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)		
Western Cape	7005741	27926	1195 (4.3)	27625	1088 (3.9)	28013	1076 (3.8)	400	-0.1%
Eastern Cape	6734001	11681	157 (1.3)	10856	146 (1.3)	10176	125 (1.2)	151	-0.1%
Northern Cape	1292786	6281	582 (9.3)	6891	753 (10.9)	5014	501 (10.0)	388	-0.9%
Free State	2928903	11677	825 (7.1)	10777	795 (7.4)	9327	795 (8.5)	318	1.1%
KwaZulu-Natal	11531628	41662	1302 (3.1)	39981	1056 (2.6)	31106	663 (2.1)	270	-0.5%
North West	4108816	9537	667 (7.0)	8623	760 (8.8)	7775	654 (8.4)	189	-0.4%
Gauteng	15488137	61109	2342 (3.8)	55945	2271 (4.1)	51609	1981 (3.8)	333	-0.2%
Mpumalanga	4679786	11193	939 (8.4)	10927	938 (8.6)	9146	849 (9.3)	195	0.7%
Limpopo	5852553	4626	247 (5.3)	4349	190 (4.4)	3743	195 (5.2)	64	0.8%
Unknown		415	1 (0.2)	393	7 (1.8)	222	3 (1.4)		
Total	59622350	186107	8257 (4.4)	176367	8004 (4.5)	156131	6842 (4.4)	262	-0.2%

^a 2020 Mid-year population Statistics SA

^b Current week compared to previous week

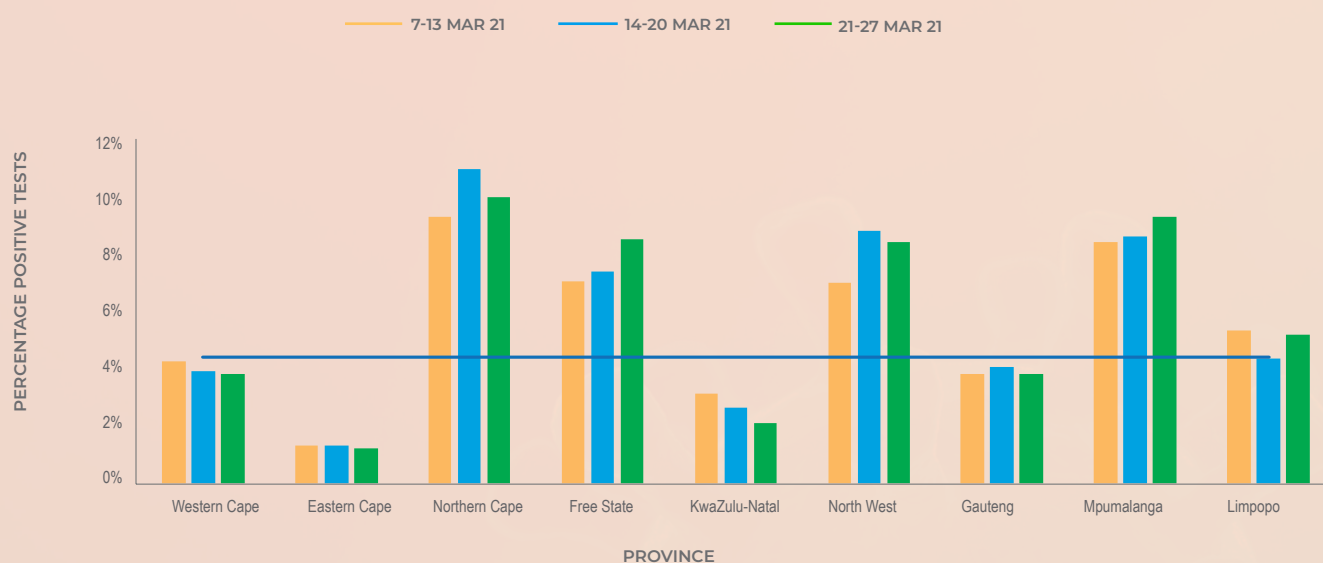


Figure 7. Weekly percentage testing positive, by province, South Africa, 7 – 27 March 2021. The horizontal blue line shows the national mean for week 12, beginning 21 March 2021

Testing in the public sector

In the public sector, the percentage testing positive decreased in the past week (5.1% in week 11 to 4.7% in week 12, $P < 0.001$) (Table 4). The percentage testing positive in week 12 of 2021 was highest in

Mpumalanga (11.1%), Northern Cape (10.6%) and North West (10.0%) 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, Gauteng, Mpumalanga and Limpopo provinces (Figure 8).

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

Province	7 - 13 Mar 2021		14 - 20 Mar 2021		21 - 27 Mar 2021	
	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)
Western Cape	10268	585 (5.7)	9682	438 (4.5)	8464	336 (4.0)
Eastern Cape	7240	79 (1.1)	6770	70 (1.0)	6247	55 (0.9)
Northern Cape	4324	449 (10.4)	4939	586 (11.9)	3392	360 (10.6)
Free State	6059	525 (8.7)	5578	463 (8.3)	4330	368 (8.5)
KwaZulu-Natal	28063	973 (3.5)	27896	810 (2.9)	19458	393 (2.0)
North West	4048	352 (8.7)	3461	386 (11.2)	2672	266 (10.0)
Gauteng	21162	1017 (4.8)	18902	1013 (5.4)	14775	728 (4.9)
Mpumalanga	5552	446 (8.0)	5304	473 (8.9)	4189	467 (11.1)
Limpopo	1514	83 (5.5)	1514	77 (5.1)	1110	63 (5.7)
Unknown	375	1 (0.3)	201	3 (1.5)	114	2 (1.8)
Total	88605	4510 (5.1)	84247	4319 (5.1)	64751	3038 (4.7)



Figure 8. Weekly percentage testing positive in the public sector, by province, South Africa, 7 – 27 March 2021. The horizontal blue line shows the national mean for week 12 of 2021, beginning 21 March 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 March 2021, with the highest proportion testing positive nationally. The distribution of public sector facilities with high PTP remains spatially diffuse. Seven of the 25 facilities showing the highest PTP are in Mpumalanga, 5 in Gauteng, and four each in the Northern Cape and North West.

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

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Northern Cape	26	0.423 (0.233;0.613)
Facility 2	Western Cape	31	0.387 (0.216;0.559)
Facility 3	Free State	27	0.333 (0.156;0.511)
Facility 4	Western Cape	27	0.333 (0.156;0.511)
Facility 5	Mpumalanga	32	0.313 (0.152;0.473)
Facility 6	Gauteng	55	0.309 (0.187;0.431)
Facility 7	North West	58	0.293 (0.176;0.410)
Facility 8	Free State	41	0.293 (0.153;0.432)
Facility 9	North West	74	0.270 (0.169;0.371)
Facility 10	Mpumalanga	44	0.250 (0.122;0.378)
Facility 11	Gauteng	49	0.245 (0.124;0.365)
Facility 12	Mpumalanga	29	0.241 (0.086;0.397)
Facility 13	North West	91	0.220 (0.135;0.305)
Facility 14	Mpumalanga	92	0.217 (0.133;0.302)
Facility 15	Mpumalanga	415	0.217 (0.177;0.257)
Facility 16	Northern Cape	29	0.207 (0.059;0.354)
Facility 17	Northern Cape	177	0.203 (0.144;0.263)
Facility 18	Northern Cape	25	0.200 (0.043;0.357)
Facility 19	Gauteng	30	0.200 (0.057;0.343)
Facility 20	Mpumalanga	25	0.200 (0.043;0.357)
Facility 21	North West	26	0.192 (0.041;0.344)
Facility 22	Gauteng	26	0.192 (0.041;0.344)
Facility 23	Free State	27	0.185 (0.039;0.332)
Facility 24	Gauteng	27	0.185 (0.039;0.332)
Facility 25	Mpumalanga	27	0.185 (0.039;0.332)

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 March 2021, with the highest proportion testing positive nationally. Private-sector facilities with high proportions testing positive are concentrated in Gauteng (n=9), with six each in Mpumalanga and the North West.

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

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Gauteng	30	0.300 (0.136;0.464)
Facility 2	Mpumalanga	78	0.231 (0.137;0.324)
Facility 3	North West	163	0.215 (0.152;0.278)
Facility 4	Gauteng	86	0.174 (0.094;0.255)
Facility 5	Mpumalanga	36	0.167 (0.045;0.288)
Facility 6	Gauteng	49	0.163 (0.060;0.267)
Facility 7	Gauteng	56	0.161 (0.065;0.257)
Facility 8	North West	131	0.153 (0.091;0.214)
Facility 9	Gauteng	60	0.150 (0.060;0.240)
Facility 10	Gauteng	120	0.150 (0.086;0.214)
Facility 11	Mpumalanga	54	0.148 (0.053;0.243)
Facility 12	Gauteng	35	0.143 (0.027;0.259)
Facility 13	Western Cape	106	0.142 (0.075;0.208)
Facility 14	Mpumalanga	209	0.139 (0.092;0.186)
Facility 15	Mpumalanga	548	0.131 (0.103;0.160)
Facility 16	Free State	46	0.130 (0.033;0.228)
Facility 17	North West	807	0.130 (0.107;0.153)
Facility 18	Gauteng	54	0.130 (0.040;0.219)
Facility 19	Mpumalanga	101	0.129 (0.063;0.194)
Facility 20	Northern Cape	47	0.128 (0.032;0.223)
Facility 21	North West	55	0.127 (0.039;0.215)
Facility 22	Gauteng	63	0.127 (0.045;0.209)
Facility 23	KwaZulu-Natal	126	0.127 (0.069;0.185)
Facility 24	North West	158	0.127 (0.075;0.178)
Facility 25	North West	101	0.119 (0.056;0.182)

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 84% of private testing facilities) in the week from 21 - 27 March 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 remain spatially diffuse: Mpumalanga (n=7), Northern Cape (n=6), North West and Free State (n=4 each) account for 21 of the 25 districts. Only one district (Bergrivier in the Western Cape) showed a PTP in the current week in excess of 30%. PTP exceeded 20% in a further 3 districts (4 in the previous week). Significant increases were observed in three districts (Pixley ka Seme and Bushbuckridge in Mpumalanga, and Beaufort West in the Western Cape).

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

Health district or sub-district	Province	PTP (95% CI)	Previous week
Bergrivier	Western Cape	0.317 (0.198-0.437)	0.162 (0.095-0.230)
Lekwa	Mpumalanga	0.241 (0.178-0.304)	0.230 (0.181-0.279)
Richtersveld	Northern Cape	0.229 (0.126-0.333)	0.292 (0.191-0.394)
Umjindi	Mpumalanga	0.200 (0.067-0.334)	0.094 (0.027-0.160)
Pixley Ka Seme	Mpumalanga	0.188 (0.152-0.224)	0.108 (0.075-0.141)
Hantam	Northern Cape	0.187 (0.133-0.242)	0.120 (0.100-0.140)
Ca-Segonyana	Northern Cape	0.187 (0.112-0.261)	0.114 (0.058-0.171)
Maquassi Hills	North West	0.186 (0.110-0.262)	0.145 (0.094-0.196)
Letsemeng	Free State	0.185 (0.085-0.285)	0.032 (0.000-0.094)
Tshwane 7	Gauteng	0.184 (0.112-0.255)	0.150 (0.100-0.200)
Joe Morolong	Northern Cape	0.162 (0.064-0.260)	0.122 (0.042-0.202)
Naledi	North West	0.158 (0.109-0.207)	...
Govan Mbeki	Mpumalanga	0.147 (0.122-0.173)	0.136 (0.113-0.160)
Thaba Chweu	Mpumalanga	0.145 (0.102-0.188)	0.177 (0.134-0.221)
Tlokwe City Council	North West	0.141 (0.117-0.164)	0.122 (0.101-0.143)
Gamagara	Northern Cape	0.137 (0.000-0.282)	0.092 (0.000-0.214)
Merafong City	Gauteng	0.137 (0.107-0.166)	0.128 (0.100-0.156)
Beaufort West	Western Cape	0.137 (0.064-0.209)	0.018 (0.000-0.053)
Setsoto	Free State	0.131 (0.062-0.201)	0.046 (0.024-0.067)
Kai Garib	Northern Cape	0.131 (0.011-0.251)	0.104 (0.050-0.158)
Bushbuckridge	Mpumalanga	0.125 (0.092-0.158)	0.067 (0.044-0.090)
Mafikeng	North West	0.120 (0.091-0.148)	0.122 (0.099-0.145)
Dihlabeng	Free State	0.116 (0.091-0.142)	0.105 (0.081-0.129)
Masilonyana	Free State	0.115 (0.008-0.221)	...
Msukaligwa	Mpumalanga	0.113 (0.088-0.137)	0.074 (0.054-0.093)

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.

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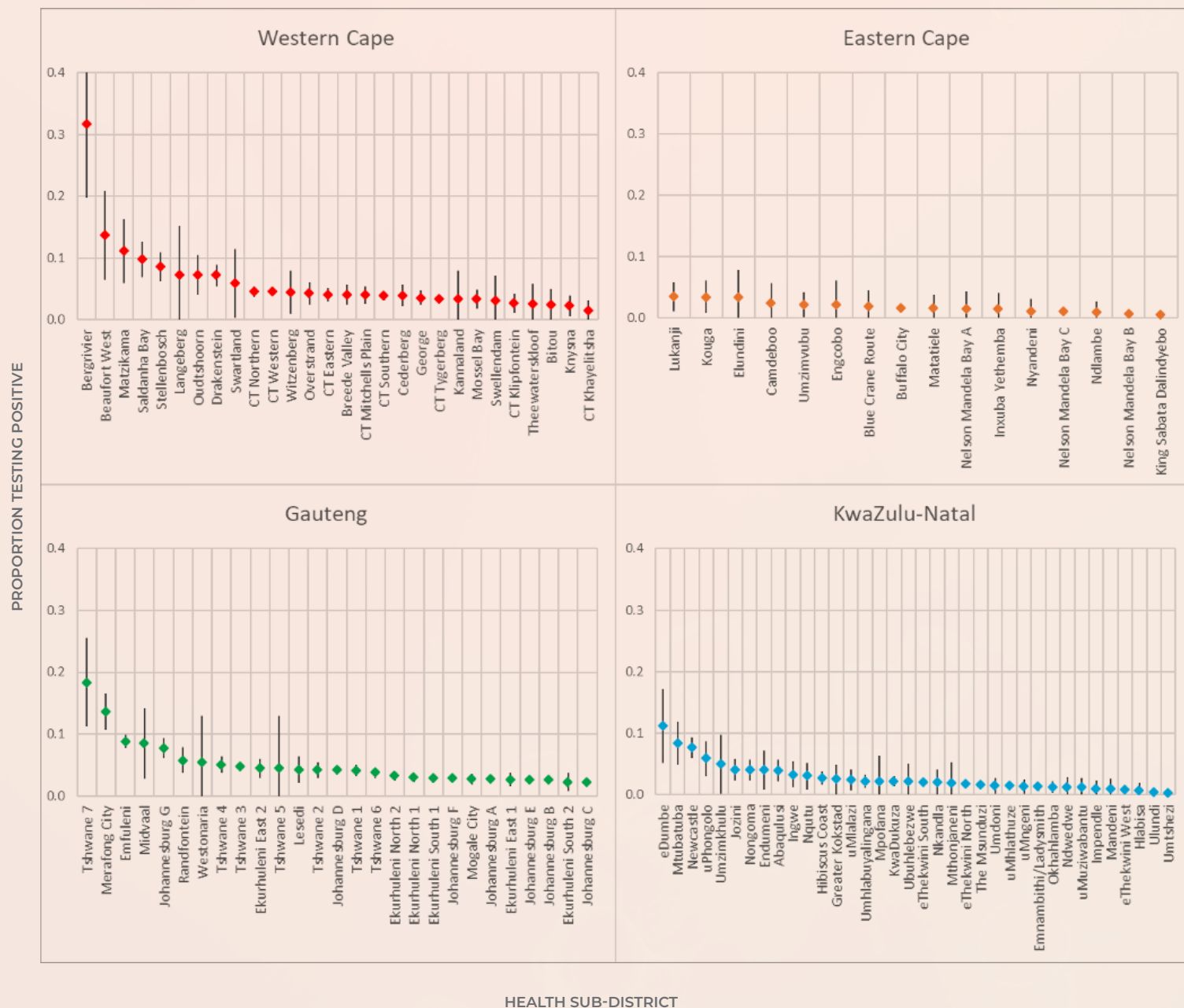


Figure 9.1 Proportions testing positive by health sub-district in the Western Cape, Eastern Cape, Gauteng and KwaZulu-Natal provinces based on public and private sector data for the week of 21 - 27 March 2021.

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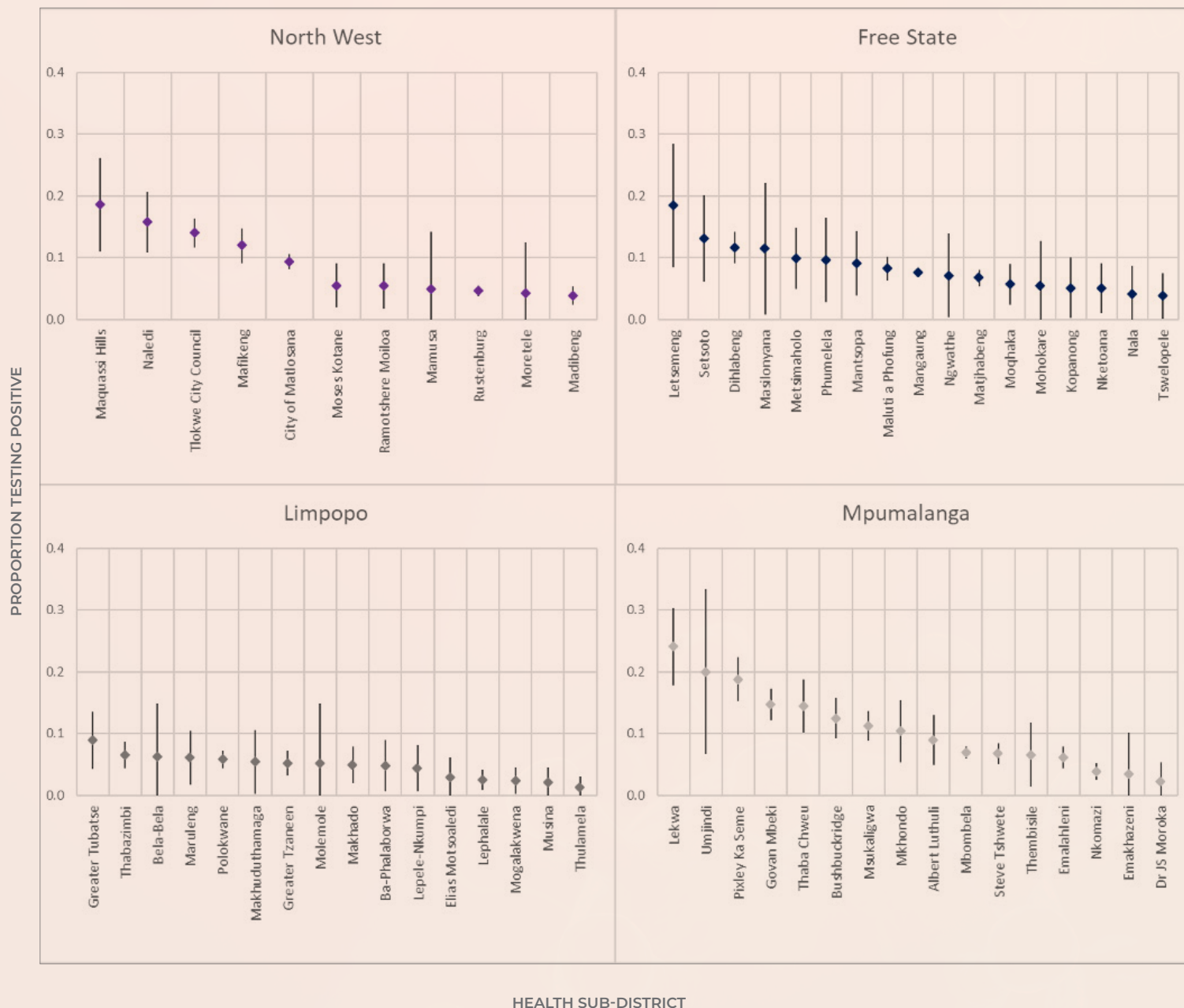


Figure 9.2 Proportions testing positive by health sub-district in the North West, Free State, Limpopo and Mpumalanga provinces based on public and private sector data for the week of 21 - 27 March 2021.

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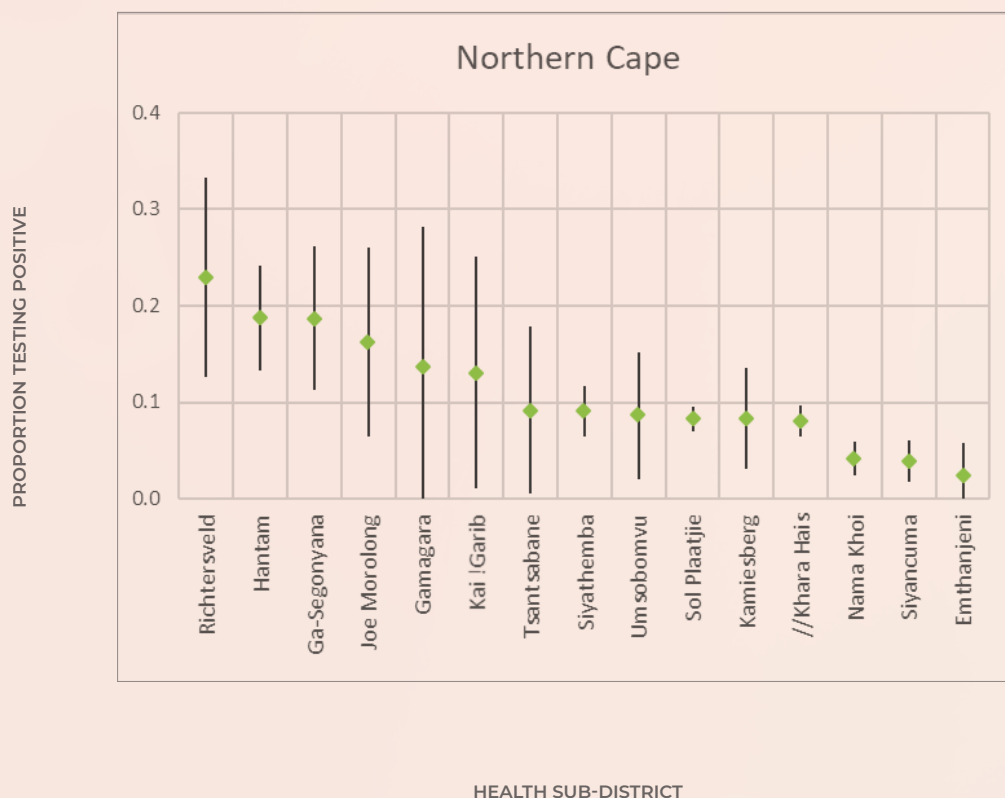


Figure 9.3 Proportions testing positive by health sub-districts in the Northern Cape Province based on public and private sector data for the week of 21 - 27 March 2021.

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).

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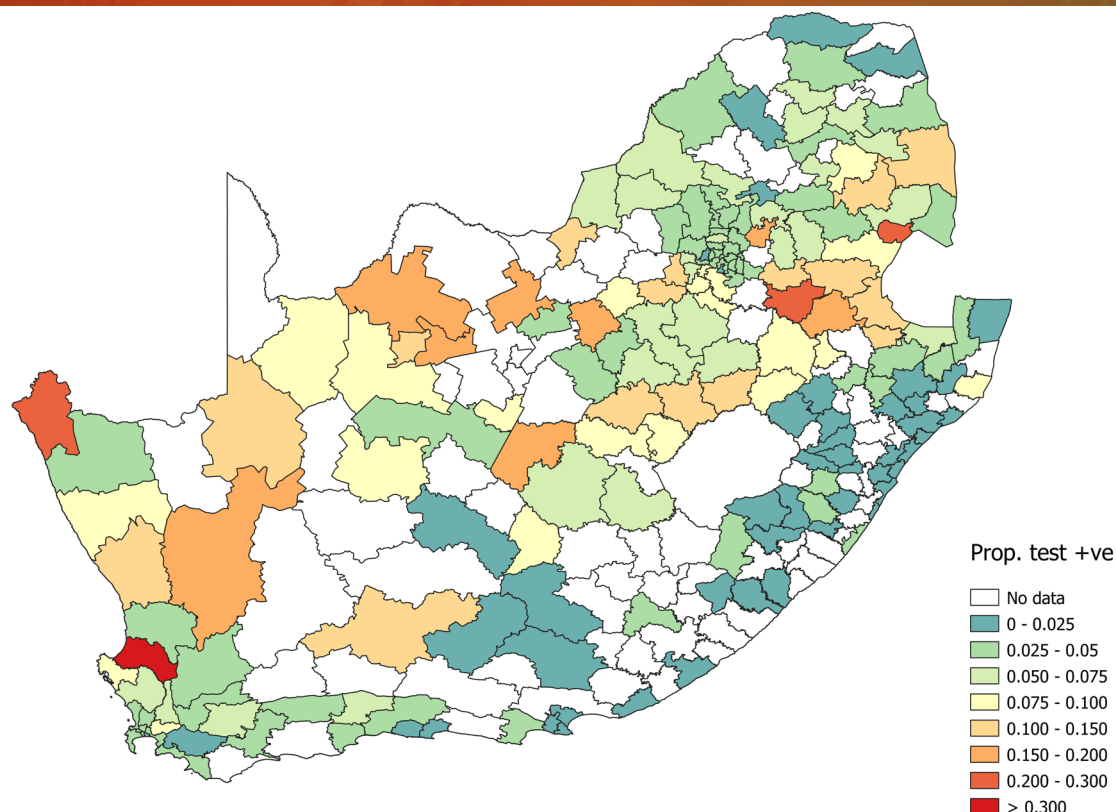


Figure 10. Proportion testing positive by health sub-district in South Africa for the week of 21 - 27 March 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

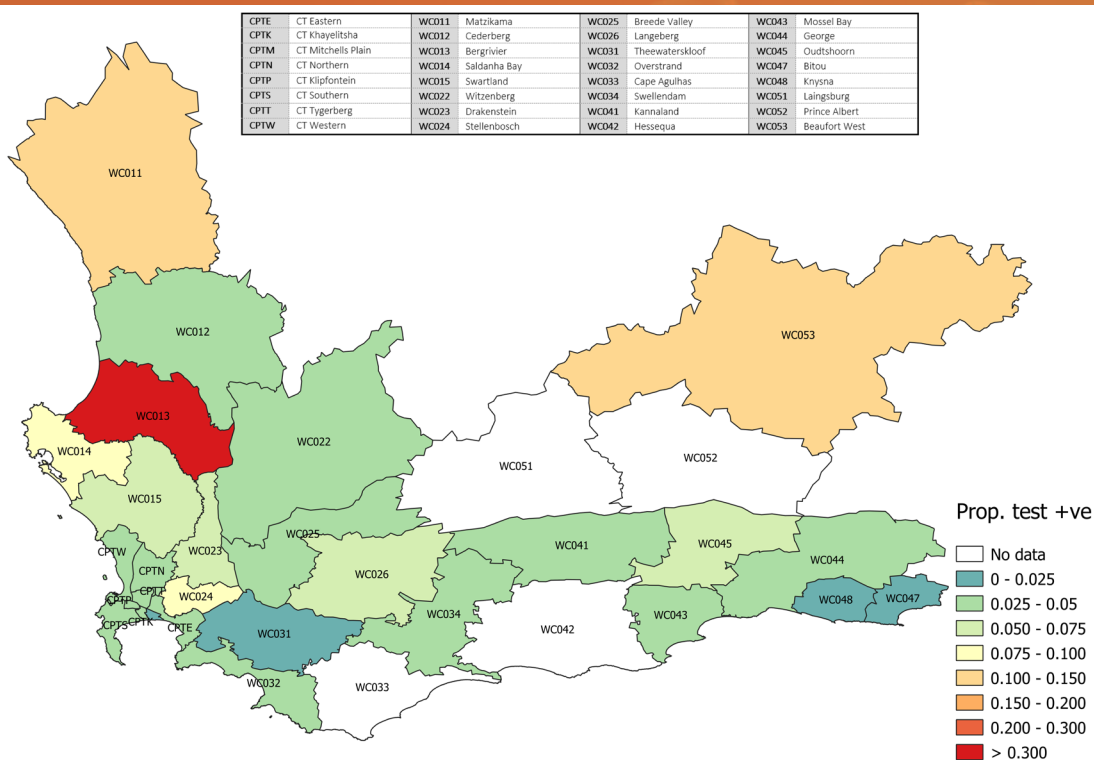


Figure 11. Proportion testing positive by health sub-district in the Western Cape province for the week of 21 - 27 March 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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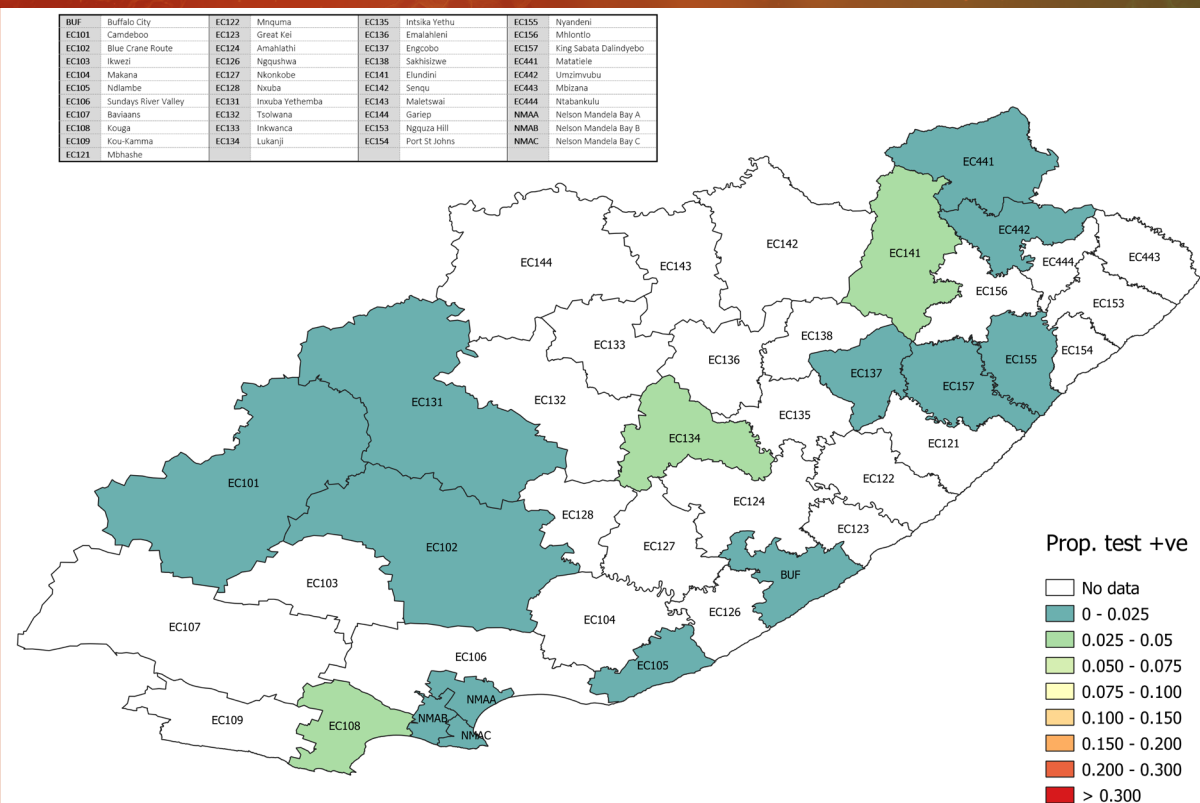


Figure 12. Proportion testing positive by health sub-district in the Eastern Cape province for the week of 21 - 27 March 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

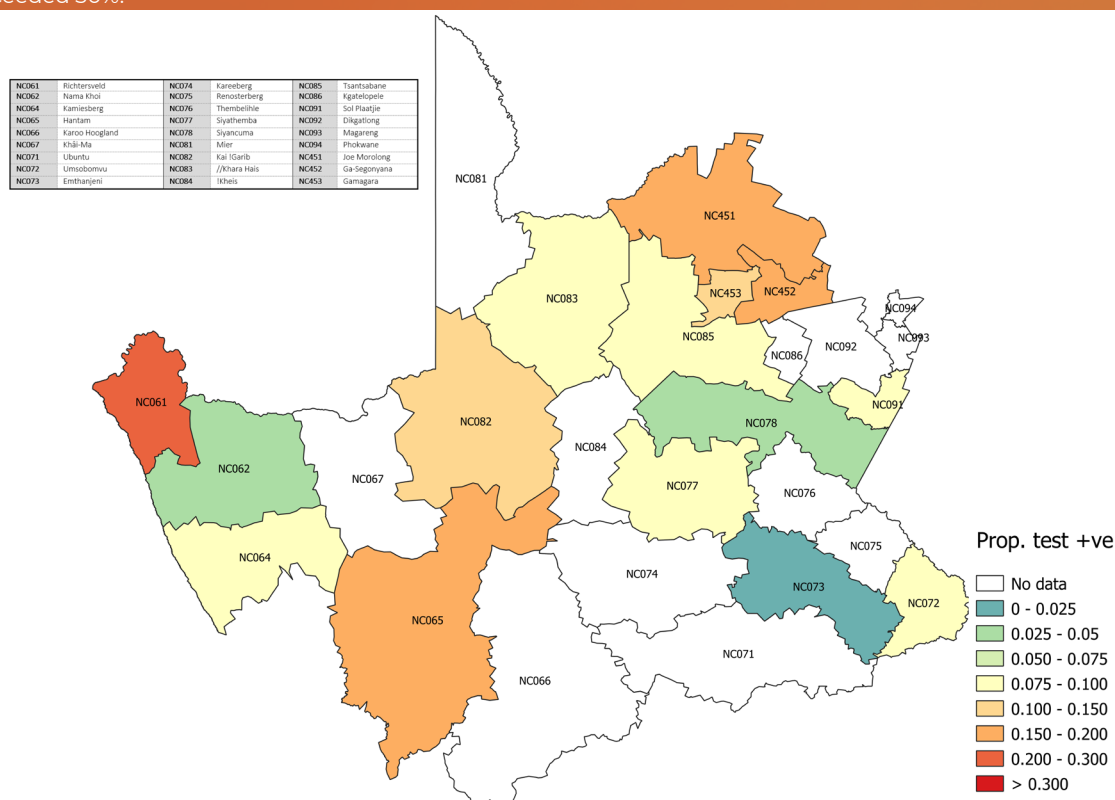


Figure 13. Proportion testing positive by health sub-district in Northern Cape Province for the week of 21 - 27 March 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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

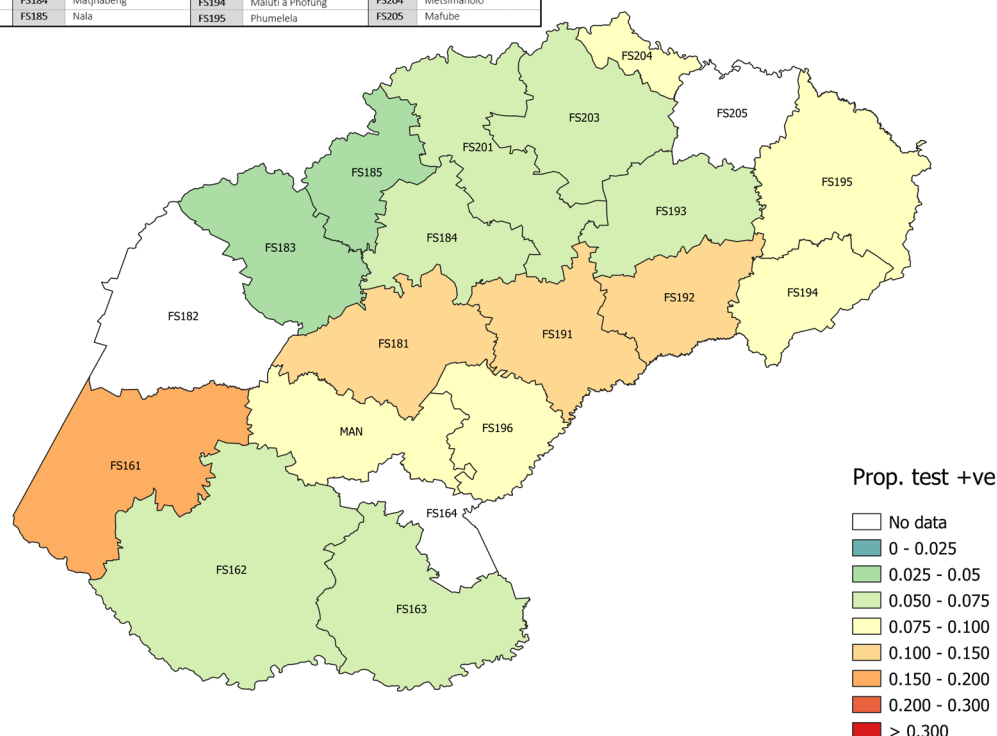


Figure 14. Proportion testing positive by health sub-district in Free State Province for the week of 21 - 27 March 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

ETHN	eThekweni North	KZN233	Indaka	KZN273	The Big 5 False Bay
ETHS	eThekweni South	KZN234	Umtshezi	KZN274	Hlabisa
ETHS	eThekweni South	KZN235	Okhahlamba	KZN275	Mtubatuba
ETHW	eThekweni West	KZN236	Imbabazane	KZN281	Mfolozi
KZN211	Vulamehlo	KZN241	Endumeni	KZN282	uMhlathuze
KZN212	Umdoni	KZN242	Nqutu	KZN283	Ntambanana
KZN213	Umkumbi	KZN244	Mlinga	KZN284	uMlalazi
KZN214	uMtuwabantu	KZN245	Umvoti	KZN285	Mthonjaneni
KZN215	Ezingoleni	KZN252	Newcastle	KZN286	Nkandla
KZN216	Hlabisa 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	Umkhambathini	KZN434	Ubuhlebezwe
KZN232	Emnambithi/Ladysmith	KZN272	Josi	KZN435	Umkhambathini

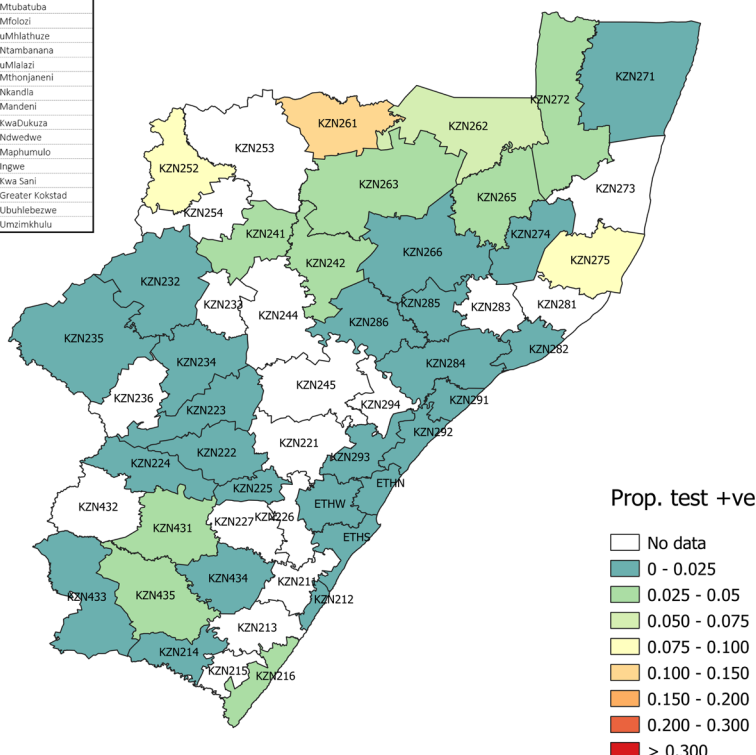


Figure 15. Proportion testing positive by health sub-district in KwaZulu-Natal Province for the week of 21 - 27 March 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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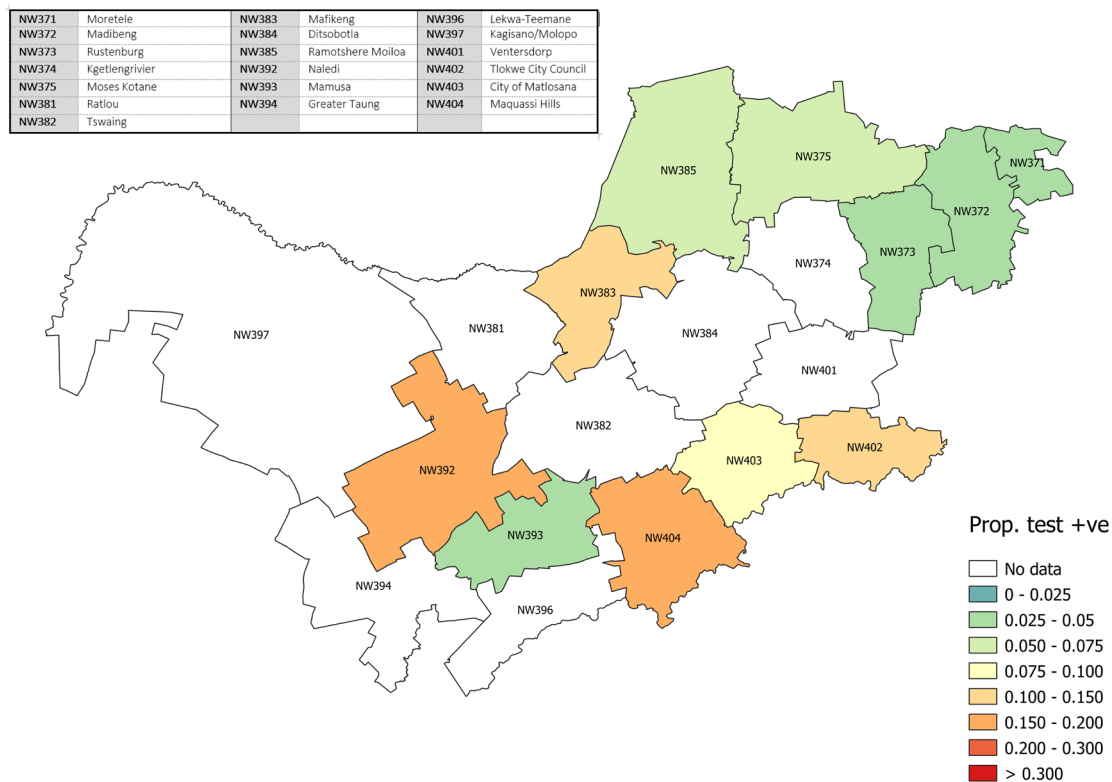


Figure 16. Proportion testing positive by health sub-district in North West Province for the week of 21 - 27 March 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

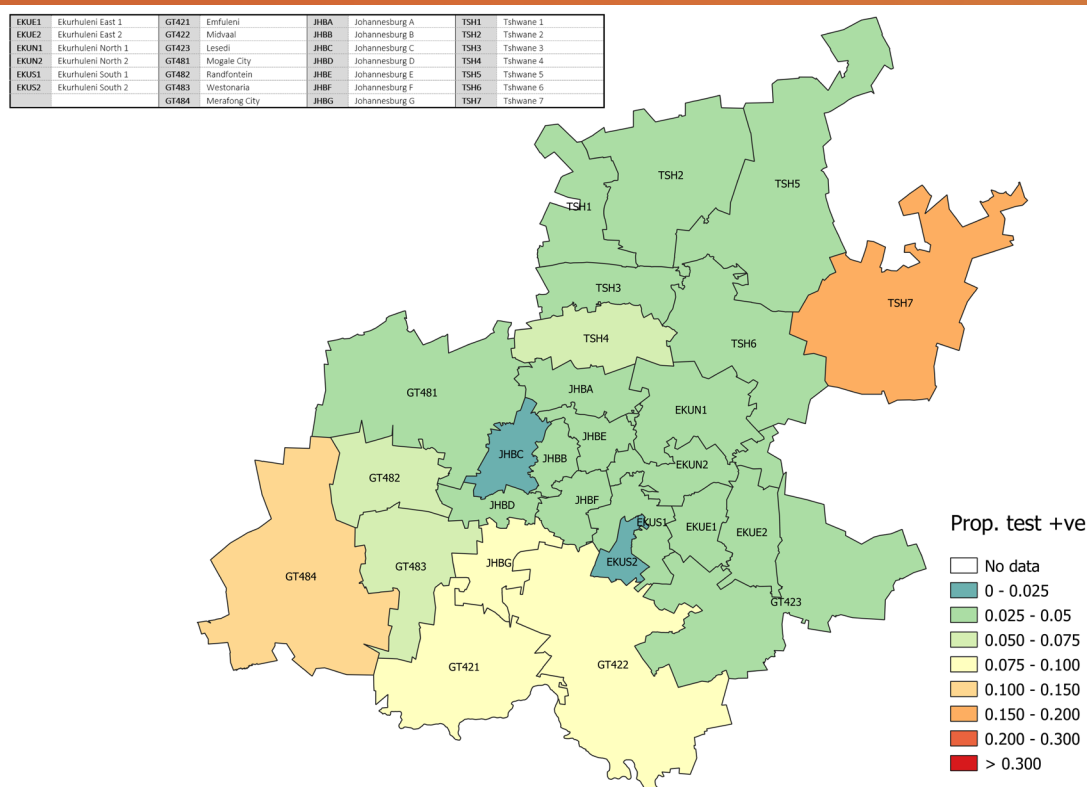


Figure 17. Proportion testing positive by health sub-district in Gauteng Province for the week of 21 - 27 March 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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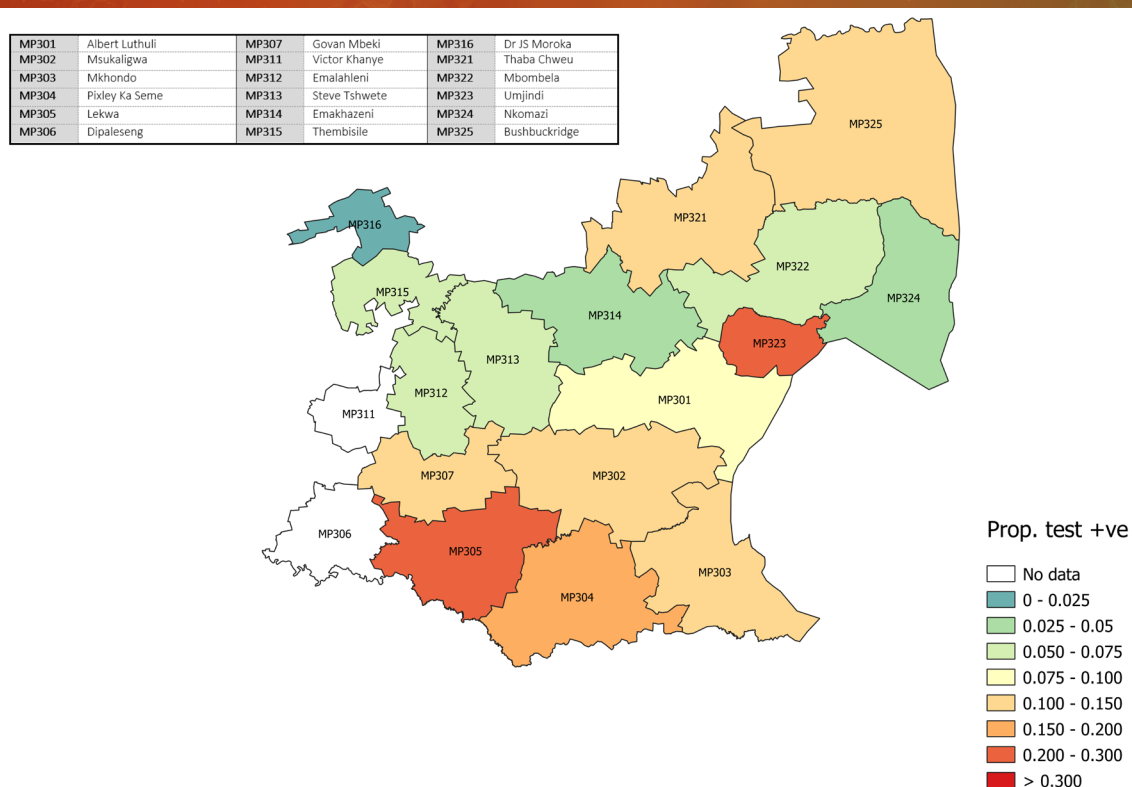


Figure 18. Proportion testing positive by health sub-district in Mpumalanga Province for the week of 21 - 27 March 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

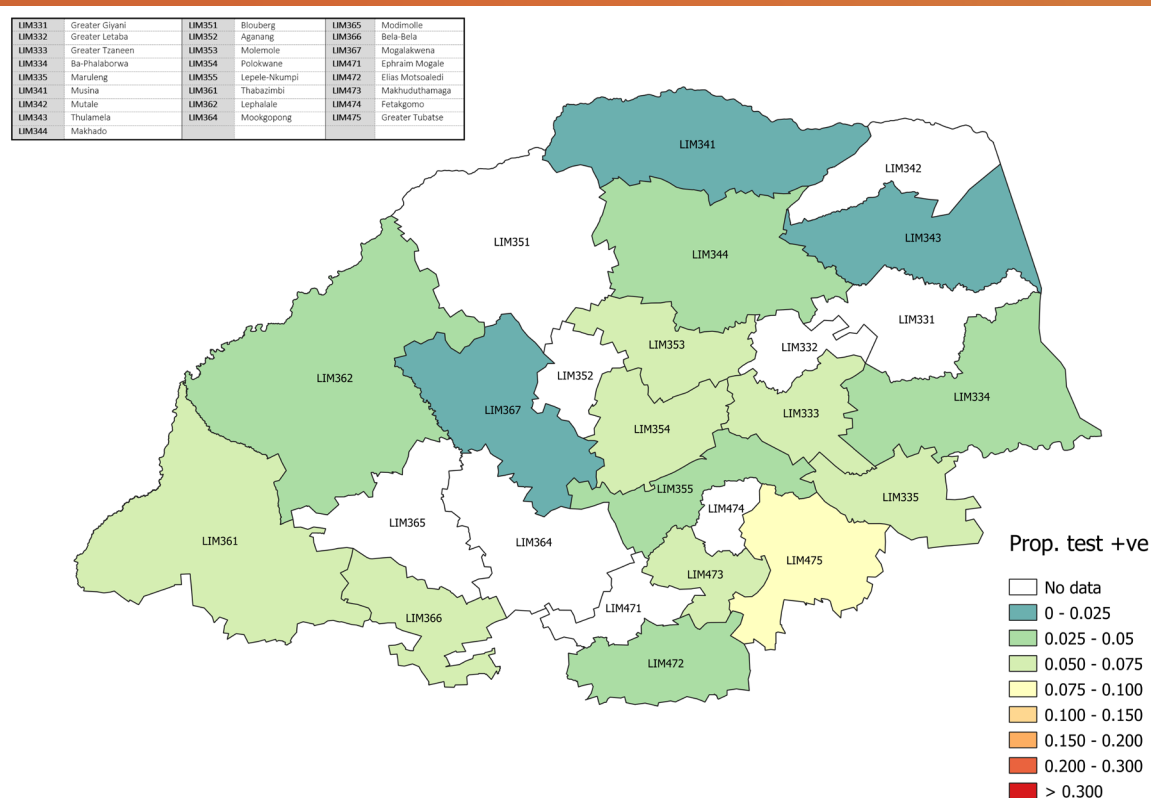


Figure 19. Proportion testing positive by health sub-district in Limpopo Province for the week of 21 - 27 March 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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Testing by patient admission status

In week 12 of 2021, 35.8% of tests were performed for hospitalised patients; 52.8% in the public sector and 27.4% in the private sector (Figure 20). The percentage testing positive in week 12 was slightly higher among

outpatients (5.0%) compared to inpatients (4.4%) (Figure 21). In week 12 the mean laboratory turnaround time for PCR tests in the public sector continued to be lower for inpatients (1.5 days) compared to outpatients (1.9 days) (Figure 22).

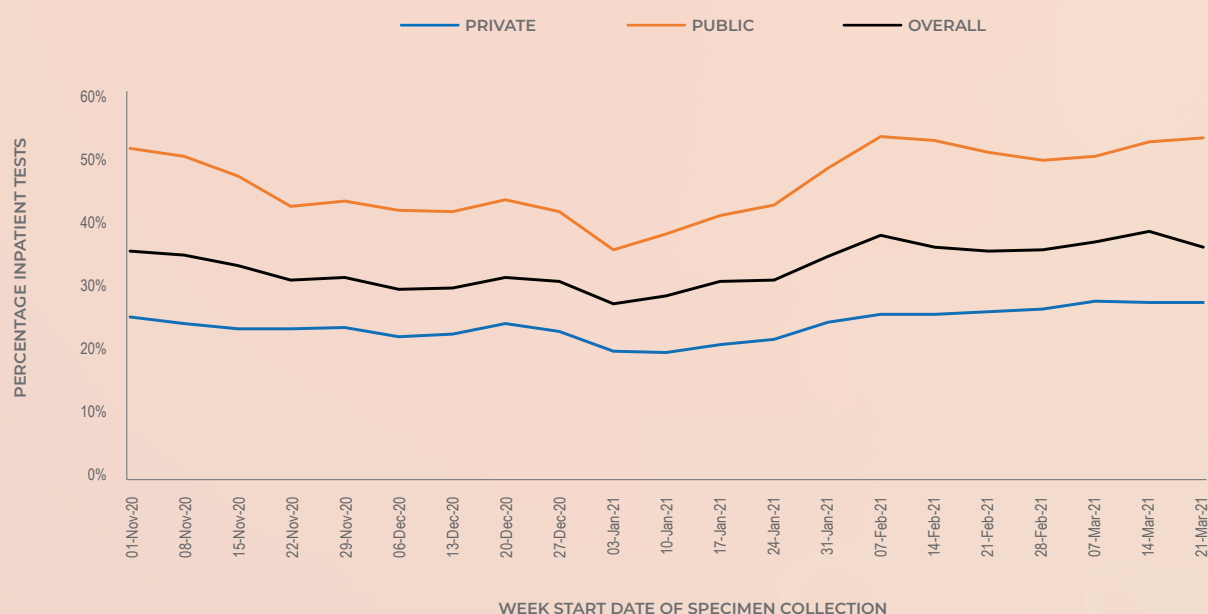


Figure 20. Percentage of inpatient tests performed by health sector, 1 November 2020 – 27 March 2021

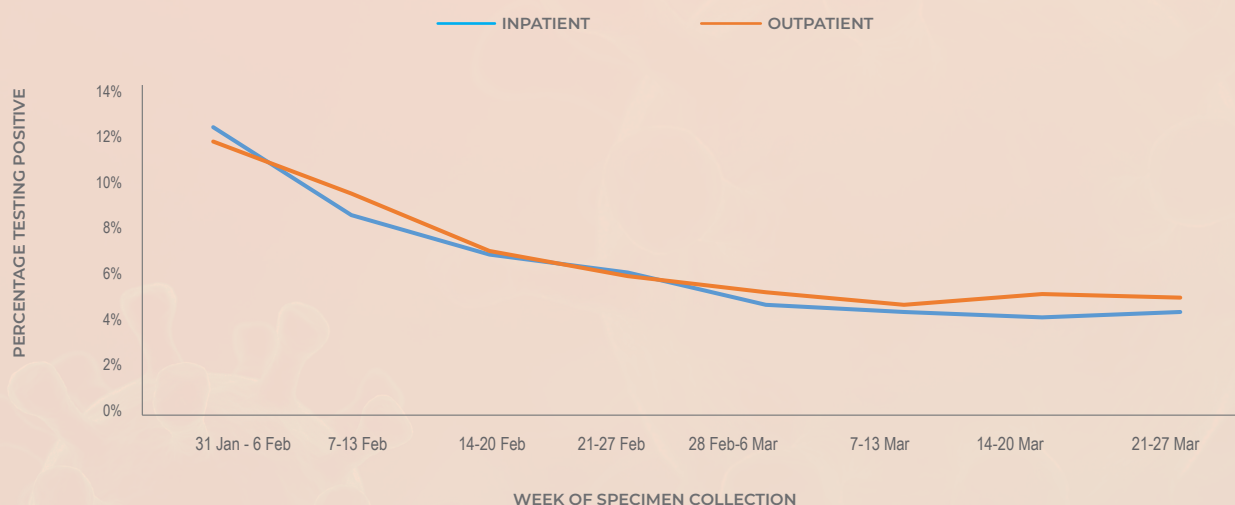


Figure 21. Percentage testing positive by patient admission status in the public sector, 31 January – 27 March 2021

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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, 28 February – 27 March 2021

Testing by age and sex

The mean age of individuals tested in week 12 of 2021 was 38.9 years, and was similar among males (39.2 years) and females (38.7 years). The majority of tests (55.5%) were performed in individuals in the 20-49 years' age groups although the distribution of tests remained slightly skewed towards younger age groups in females compared to males (Figure 23). In week 12, the testing rate was higher in females (259 per 100,000

persons) compared to males (251 per 100,000 persons) (Figure 24). The highest testing rates continued to be observed in individuals ≥ 80 years of age (560 per 100,000 persons) in week 12. The percentage testing positive was highest in individuals aged 15-19 years (5.8%); in males the highest percentage testing positive was in the 10-14 year age group (5.8%), and in females was in the 15-19 year age group (6.2%) (Figure 24).

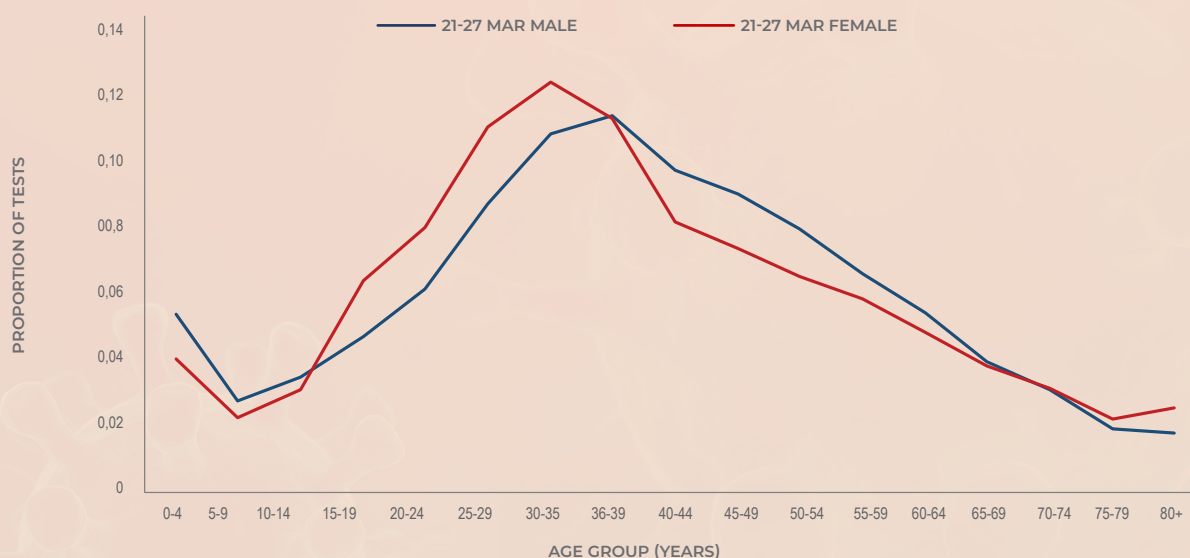


Figure 23. Proportion of tests by age group and sex, South Africa, week 12, 21 - 27 March 2021

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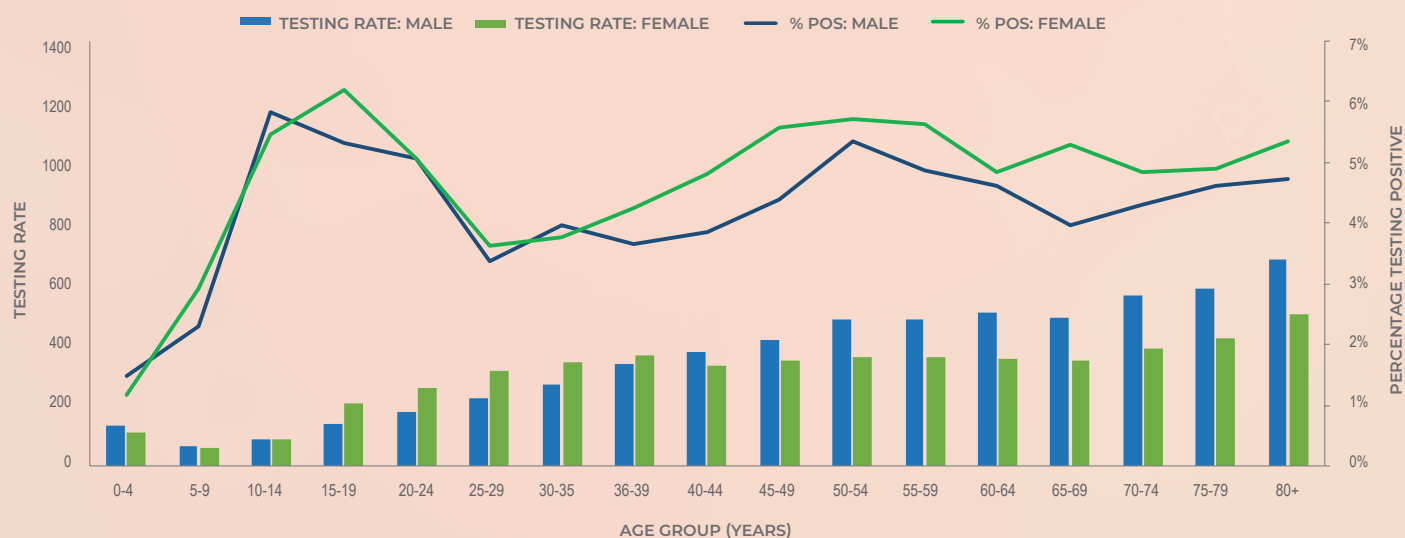


Figure 24. Testing rates per 100,000 persons and percentage testing positive by age group and sex, South Africa, week 12, 21 - 27 March 2021

Testing by test type

Up to the end of week 12 of 2021, 6.1% of all tests performed were antigen tests. The percentage of antigen tests was highest (20.2%) in week 5 and has subsequently declined to 14.4% of all tests in week 12 (Figure 25). In week 12, 22,524 antigen tests were performed, of which 82.1% were performed in the public sector. The majority of antigen tests have been

performed in KwaZulu-Natal (47.0%) and Eastern Cape (13.9%) provinces. The percentage testing positive was higher for PCR tests compared to antigen tests, although smaller differences have been observed as the overall percentage testing positive has decreased over recent weeks (Figure 26). The mean turnaround time for antigen tests performed in week 12 was 7.5 days in the public sector and 0.3 days in the private sector (Figure 27). Not all antigen tests are included in this report, efforts are ongoing to improve completeness.

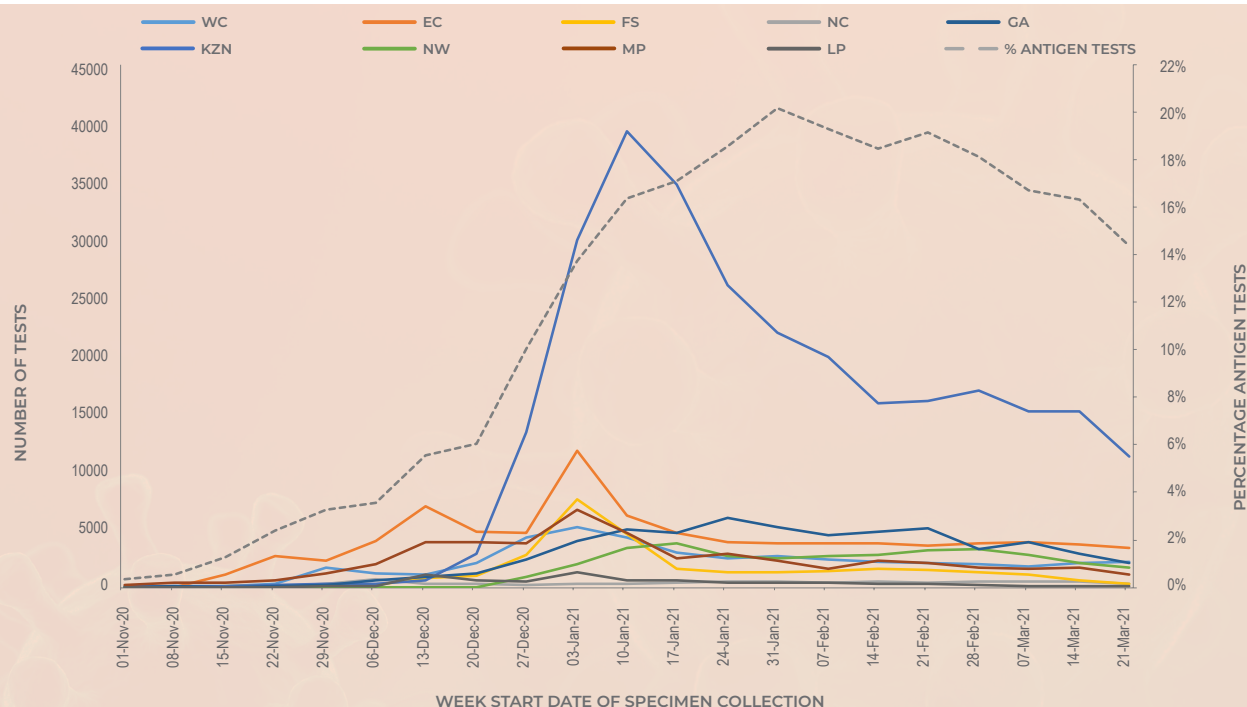


Figure 25. Number of antigen tests by province, and overall percentage antigen tests, South Africa, 1 November 2020 – 27 March 2021. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GT, Gauteng; NC, Northern Cape; NW, North West; MP, Mpumalanga; LP, Limpopo

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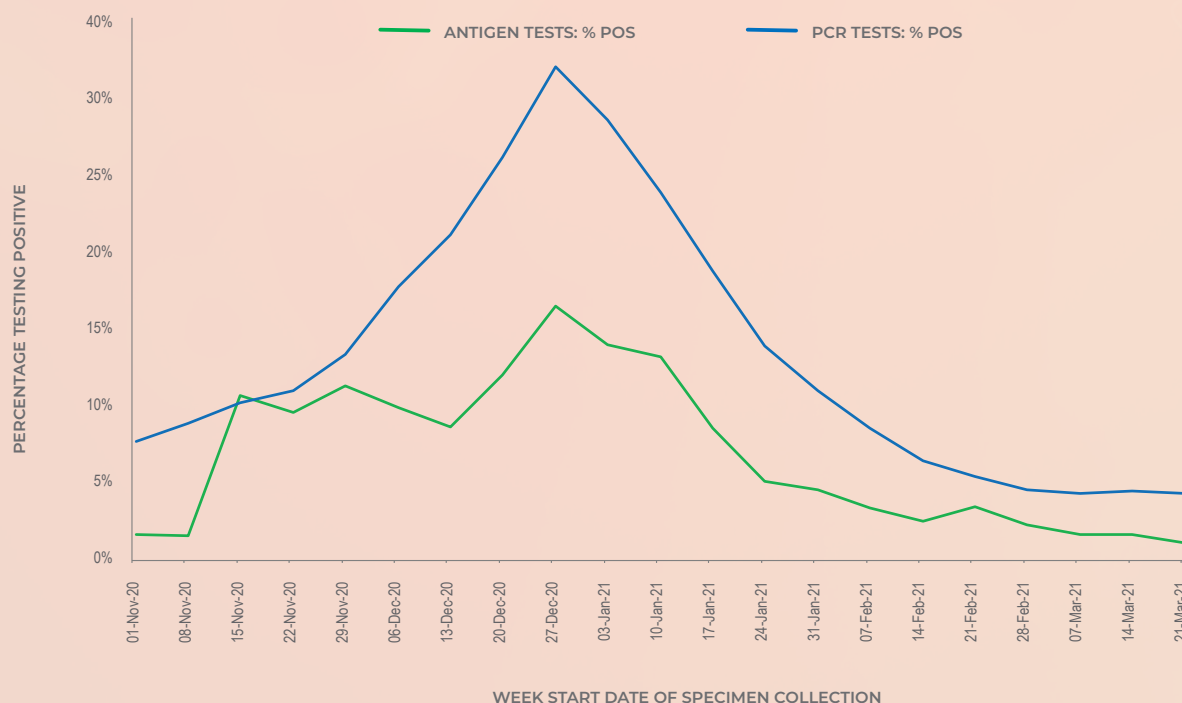


Figure 26. Percentage of laboratory tests positive for SARS-CoV-2 by test type and date of specimen collection, South Africa, 1 November 2020 – 27 March 2021

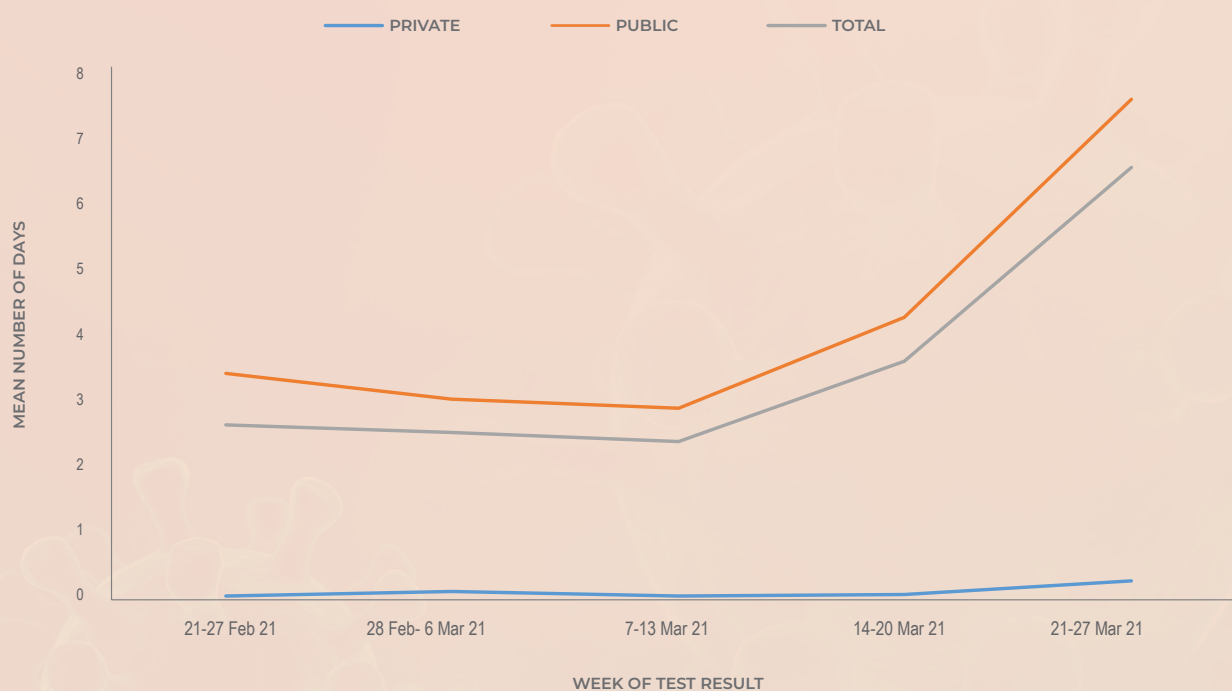


Figure 27. Mean number of days between date of specimen collection and date of test result for antigen tests, by week of test result, South Africa, 21 February – 27 March 2021

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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=498,527), with the number of tests performed in week 12 of 2021 (n=156,131) similar to the previous few weeks. Gauteng (33.1%), KwaZulu-Natal (19.9%) and Western Cape (17.9%) provinces performed the largest number of tests in week 12. The overall testing rate in week 12 was 262 per 100,000 persons; highest in the Western Cape (400 per 100,000 persons) and lowest in Limpopo (64 per 100,000 persons). Antigen tests accounted for 14.4% of all tests performed in week 12. The overall mean laboratory turnaround time for PCR tests was 1.2 days in week 12; 1.5 days in the public sector and 1.0 day 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 12 of 2021 the percentage testing positive was 4.4%, slightly lower than the previous week. The percentage testing positive in week 12 was highest in the Northern Cape (10.0%) and Mpumalanga (9.3%) provinces. The percentage testing positive was 5-9% in the Free State, North West and Limpopo, and was <5% in the Western Cape, Eastern Cape, KwaZulu-Natal, and Gauteng in week 12. Compared to the previous week, the percentage testing positive in week 12 increased in the Free State province. The percentage testing positive decreased in KwaZulu-Natal, and was unchanged in the Western Cape, Eastern Cape, Northern Cape, North West, Gauteng, Mpumalanga and Limpopo.