

# COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR  
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 4 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 30 January 2021 (Week 4 of 2021).

## HIGHLIGHTS

- In the period 1 March 2020 through 30 January 2021, 8,234,743 laboratory tests for SARS-CoV-2 have been performed nationally.
- The number of tests performed in week 4 of 2021 (n=230,376) was lower than performed in the previous few weeks.
- KwaZulu-Natal (513 per 100,000 persons), Gauteng (476 per 100,000 persons), Northern Cape (467 per 100,000 persons) and Western Cape (452 per 100,000 persons) provinces had the highest testing rates in week 4 of 2021.
- In week 4 of 2021 the percentage testing positive was 14.0%, lower than has been observed in the previous few weeks.
- Percentage testing positive in week 4 of 2021 was highest in Limpopo (25.6%) and Mpumalanga (20.9%) provinces. Percentage testing positive was 10%-20% in the Western Cape, Northern Cape, KwaZulu-Natal, North West, Free State and Gauteng, and was <10% in the Eastern Cape.
- In week 4 of 2021, compared to the previous week, the percentage testing positive decreased in all provinces.
- Mean laboratory turnaround time in week 4 of 2021 was 2.0 days; 3.2 days in the public sector and <1 day in the private sector.
- Integration of antigen test data from the different settings where these tests are being used into the national database is ongoing, leading to some underestimation of testing volumes.

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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 (NMCSS). Date of specimen receipt in the laboratory was used when date of specimen collection was missing. Proportion testing positive (PTP) was calculated as the number of positive tests/total number of tests and presented as percentage by multiplying with 100. We used 2020 mid-year population estimates from Statistics South

Africa to calculate the testing rate, expressed as tests per 100,000 persons. Patient admission status for public and private sector tests was determined based on the reported patient facility. Laboratory turnaround times were calculated for PCR-based tests and were calculated as the mean number of days between specimen collection and reporting of the result. Categorical variables were compared using the chi-squared test, and continuous variables with the students t-test, with a P-value<0.05 considered statistically significant.

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

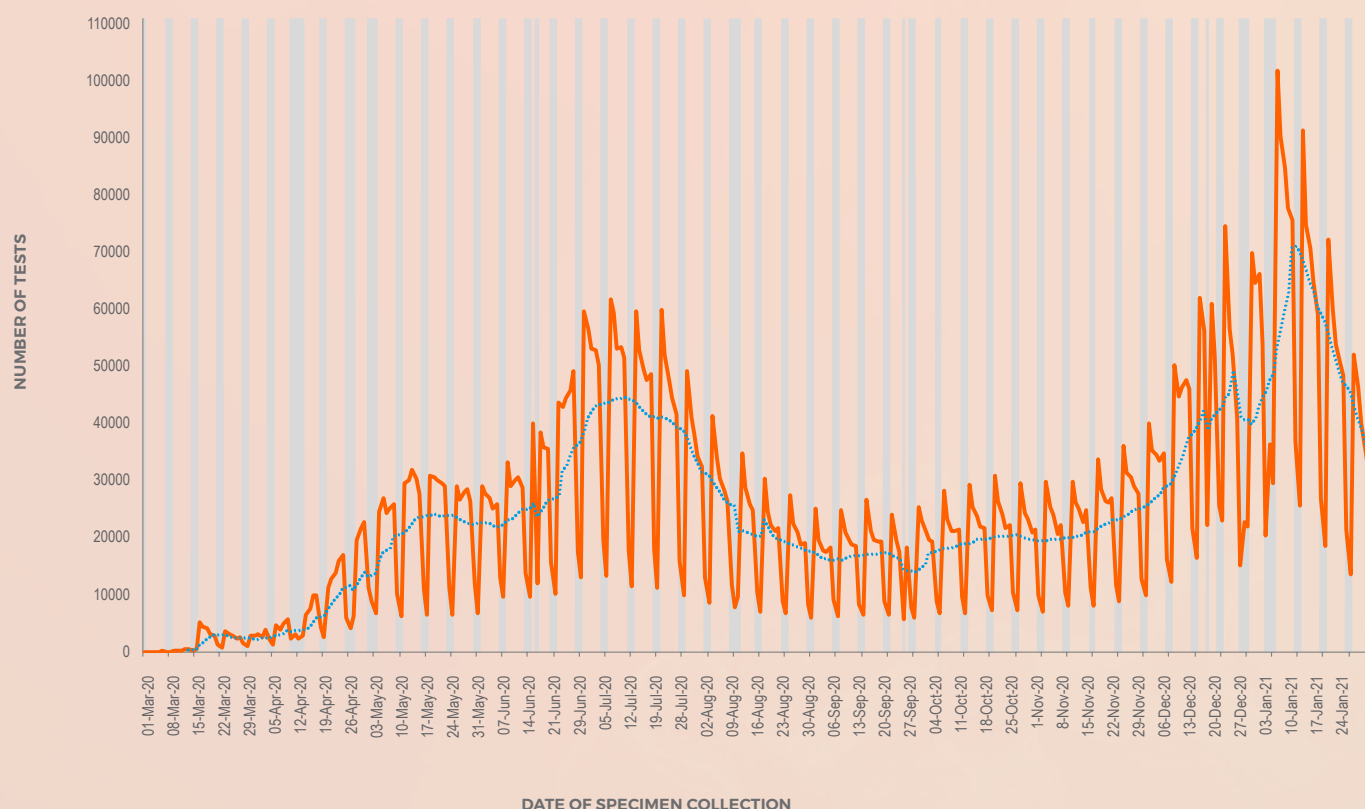
The report includes tests conducted between 1 March 2020 (week 10 of 2020), the week when the first case of COVID-19 was confirmed, and 30 January 2021 (week 4 of 2021).

## Testing volumes and proportion testing positive

From 1 March 2020 through 30 January 2021, 8,234,743 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=307,900), and subsequently decreased. Weekly testing volumes increased again from week 47 (beginning 15 November 2020), with the highest weekly number of tests performed since the start of the pandemic performed in week 1 of 2021 (n=492,346). In week 4 of 2021, 230,376 tests were performed, lower than the previous few 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).

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**Figure 1.** Number laboratory tests conducted by date of specimen collection, South Africa, 1 March 2020 – 30 January 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 4 of 2021 was 18.6% (Table 1). During the first wave of infections, the percentage testing positive increased week on week from week 18 to a peak of 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 34.9% in week 53 of 2020. The percentage testing positive in week 4 of 2021 was 14.0%, lower than has been observed in the previous few weeks (Figure 2).

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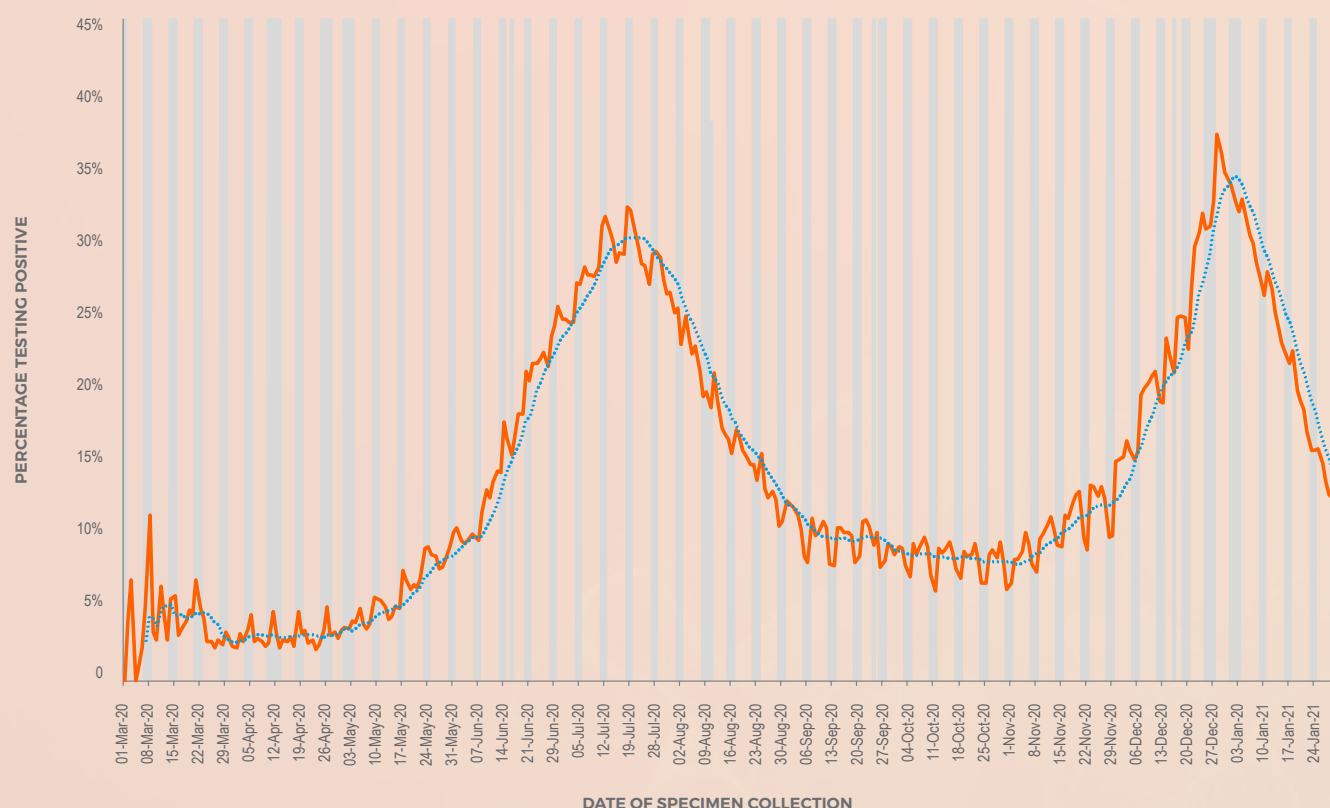
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**Table 1.** Weekly number of tests conducted and positive tests, South Africa, 1 March 2020 – 30 January 2021

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
10	01-Mar-20	453 (0.0)	13	2.9
11	08-Mar-20	2380 (0.0)	103	4.3
12	15-Mar-20	21567 (0.3)	897	4.2
13	22-Mar-20	17541 (0.2)	543	3.1
14	29-Mar-20	18245 (0.2)	520	2.9
15	05-Apr-20	26298 (0.3)	796	3.0
16	12-Apr-20	43748 (0.5)	1295	3.0
17	19-Apr-20	79174 (1.0)	2177	2.7
18	26-Apr-20	93807 (1.1)	3203	3.4
19	03-May-20	142700 (1.7)	6017	4.2
20	10-May-20	165368 (2.0)	8090	4.9
21	17-May-20	166534 (2.0)	11379	6.8
22	24-May-20	156133 (1.9)	12967	8.3
23	31-May-20	153562 (1.9)	15079	9.8
24	07-Jun-20	173890 (2.1)	22358	12.9
25	14-Jun-20	186044 (2.3)	32638	17.5
26	21-Jun-20	252082 (3.1)	55044	21.8
27	28-Jun-20	302693 (3.7)	75306	24.9
28	05-Jul-20	307900 (3.7)	86032	27.9
29	12-Jul-20	285586 (3.5)	84924	29.7
30	19-Jul-20	270880 (3.3)	78633	29.0
31	26-Jul-20	216373 (2.6)	58391	27.0
32	02-Aug-20	179560 (2.2)	40991	22.8
33	09-Aug-20	141072 (1.7)	26262	18.6
34	16-Aug-20	135004 (1.6)	21374	15.8
35	23-Aug-20	123327 (1.5)	16330	13.2
36	30-Aug-20	112755 (1.4)	12790	11.3
37	06-Sep-20	116991 (1.4)	11952	10.2
38	13-Sep-20	120706 (1.5)	12011	10.0
39	20-Sep-20	98813 (1.2)	10098	10.2
40	27-Sep-20	123047 (1.5)	11006	8.9
41	04-Oct-20	131026 (1.6)	11777	9.0
42	11-Oct-20	137949 (1.7)	12072	8.8
43	18-Oct-20	142144 (1.7)	12066	8.5
44	25-Oct-20	135826 (1.6)	11477	8.4
45	01-Nov-20	138785 (1.7)	12132	8.7
46	08-Nov-20	146952 (1.8)	14838	10.1
47	15-Nov-20	160608 (2.0)	18760	11.7
48	22-Nov-20	175641 (2.1)	22042	12.5
49	29-Nov-20	202939 (2.5)	30761	15.2
50	06-Dec-20	266846 (3.2)	53288	20.0
51	13-Dec-20	293234 (3.6)	68529	23.4
52	20-Dec-20	283004 (3.4)	81858	28.9
53	27-Dec-20	330571 (4.0)	115331	34.9
1	03-Jan-21	492346 (6.0)	150008	30.5
2	10-Jan-21	409923 (5.0)	104091	25.4
3	17-Jan-21	322340 (3.9)	62784	19.5
4	24-Jan-21	230376 (2.8)	32304	14.0
<b>Total</b>		<b>8234743 (100.0)</b>	<b>1533337</b>	<b>18.6</b>

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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 – 30 January 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 30 January 2021, 3,570,171 laboratory tests were conducted in public sector laboratories, with 19.3% testing positive. Over this same period, private sector laboratories conducted 4,664,572 tests, with 18.1% testing positive (Table 2). Overall the public sector has conducted 43.4% of tests and accounted for 45.0% 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 (35.5%) and private sector (34.4%). From week 3 to week 4 of 2021, the percentage testing positive

decreased by 5.7% in the public sector (20.8% to 15.1%,  $P < 0.001$ ), and decreased by 5.0% (18.0% to 13.0%,  $P < 0.001$ ) in the private sector. In week 4 of 2021 the percentage testing positive was higher in the public sector (15.1%) compared to the private sector (13.0%) ( $P < 0.001$ ).

The mean turnaround time for PCR tests conducted in week 4 of 2021 was 2.0 days. Turnaround time decreased slightly in the public sector (3.2 days) and remained consistent in the private sector (0.8 days) (Figure 3). Turnaround times for public sector tests were highest in KwaZulu-Natal (5.2 days), Mpumalanga (5.0 days), North West (4.1 days) and Limpopo (3.6 days) provinces in week 4 (Figure 4). Fourteen of the 28 (50%) NHLS laboratories performing PCR testing for SARS-CoV-2 had turnaround times  $\leq 2$  days (Figure 5).



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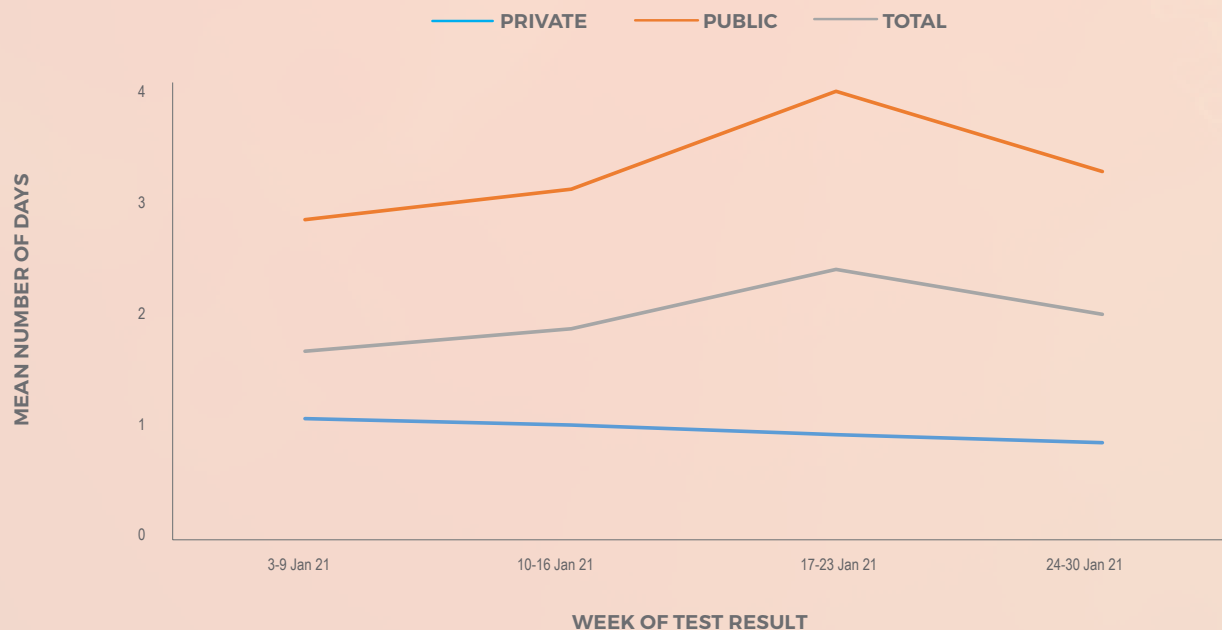
**Table 2.** Weekly number of tests conducted and positive tests, by healthcare sector, South Africa, 1 March 2020 – 30 January 2021

Week number	Week beginning	Public sector		Private sector		Public sector percentage of		Ratio of PTP <sup>a</sup>
		Tests	Cases n (%)	Tests	Positive tests n (%)	Tests (%)	Positive tests (%)	
10	01-Mar-20	293	10 (3.4)	160	3 (1.9)	64.7	76.9	1.820
11	08-Mar-20	401	27 (6.7)	1979	76 (3.8)	16.8	26.2	1.753
12	15-Mar-20	1442	81 (5.6)	20125	816 (4.1)	6.7	9.0	1.385
13	22-Mar-20	3477	149 (4.3)	14064	394 (2.8)	19.8	27.4	1.530
14	29-Mar-20	5868	194 (3.3)	12377	326 (2.6)	32.2	37.3	1.255
15	05-Apr-20	11735	417 (3.6)	14563	379 (2.6)	44.6	52.4	1.365
16	12-Apr-20	24166	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	67468	2453 (3.6)	26339	750 (2.8)	71.9	76.6	1.277
19	03-May-20	94336	4506 (4.8)	48364	1511 (3.1)	66.1	74.9	1.529
20	10-May-20	107997	5443 (5.0)	57371	2647 (4.6)	65.3	67.3	1.092
21	17-May-20	98647	7031 (7.1)	67887	4348 (6.4)	59.2	61.8	1.113
22	24-May-20	77596	6411 (8.3)	78537	6556 (8.3)	49.7	49.4	0.990
23	31-May-20	63943	6626 (10.4)	89619	8453 (9.4)	41.6	43.9	1.099
24	07-Jun-20	64653	8038 (12.4)	109237	14320 (13.1)	37.2	36.0	0.948
25	14-Jun-20	61147	11982 (19.6)	124897	20656 (16.5)	32.9	36.7	1.185
26	21-Jun-20	90452	20425 (22.6)	161630	34619 (21.4)	35.9	37.1	1.054
27	28-Jun-20	106366	27244 (25.6)	196327	48062 (24.5)	35.1	36.2	1.046
28	05-Jul-20	117722	32238 (27.4)	190178	53794 (28.3)	38.2	37.5	0.968
29	12-Jul-20	110658	31383 (28.4)	174928	53541 (30.6)	38.7	37.0	0.927
30	19-Jul-20	105206	30319 (28.8)	165674	48314 (29.2)	38.8	38.6	0.988
31	26-Jul-20	81234	22782 (28.0)	135139	35609 (26.3)	37.5	39.0	1.064
32	02-Aug-20	70566	16996 (24.1)	108994	23995 (22.0)	39.3	41.5	1.094
33	09-Aug-20	58660	11172 (19.0)	82412	15090 (18.3)	41.6	42.5	1.040
34	16-Aug-20	56136	9621 (17.1)	78868	11753 (14.9)	41.6	45.0	1.150
35	23-Aug-20	50317	7790 (15.5)	73010	8540 (11.7)	40.8	47.7	1.324
36	30-Aug-20	45419	6096 (13.4)	67336	6694 (9.9)	40.3	47.7	1.350
37	06-Sep-20	51054	6421 (12.6)	65937	5531 (8.4)	43.6	53.7	1.499
38	13-Sep-20	53704	6547 (12.2)	67002	5464 (8.2)	44.5	54.5	1.495
39	20-Sep-20	44839	5530 (12.3)	53974	4568 (8.5)	45.4	54.8	1.457
40	27-Sep-20	48626	5567 (11.4)	74421	5439 (7.3)	39.5	50.6	1.566
41	04-Oct-20	50428	5688 (11.3)	80598	6089 (7.6)	38.5	48.3	1.493
42	11-Oct-20	53444	5702 (10.7)	84505	6370 (7.5)	38.7	47.2	1.415
43	18-Oct-20	56120	6044 (10.8)	86024	6022 (7.0)	39.5	50.1	1.538
44	25-Oct-20	51281	5721 (11.2)	84545	5756 (6.8)	37.8	49.8	1.639
45	01-Nov-20	53017	6067 (11.4)	85768	6065 (7.1)	38.2	50.0	1.618
46	08-Nov-20	58992	8110 (13.7)	87960	6728 (7.6)	40.1	54.7	1.797
47	15-Nov-20	67795	10702 (15.8)	92813	8058 (8.7)	42.2	57.0	1.818
48	22-Nov-20	74781	12243 (16.4)	100860	9799 (9.7)	42.6	55.5	1.685
49	29-Nov-20	81348	15833 (19.5)	121591	14928 (12.3)	40.1	51.5	1.585
50	06-Dec-20	107170	24734 (23.1)	159676	28554 (17.9)	40.2	46.4	1.291
51	13-Dec-20	116489	29862 (25.6)	176745	38667 (21.9)	39.7	43.6	1.172
52	20-Dec-20	109208	34168 (31.3)	173796	47690 (27.4)	38.6	41.7	1.140
53	27-Dec-20	148717	52757 (35.5)	181854	62574 (34.4)	45.0	45.7	1.031
1	03-Jan-21	230103	70487 (30.6)	262243	79521 (30.3)	46.7	47.0	1.010
2	10-Jan-21	201928	53628 (26.6)	207995	50463 (24.3)	49.3	51.5	1.095
3	17-Jan-21	166963	34762 (20.8)	155377	28022 (18.0)	51.8	55.4	1.154
4	24-Jan-21	113149	17068 (15.1)	117227	15236 (13.0)	49.1	52.8	1.161
<b>Total</b>		<b>3570171</b>	<b>689342 (19.3)</b>	<b>4664572</b>	<b>843995 (18.1)</b>	<b>43.4</b>	<b>45.0</b>	<b>1.067</b>

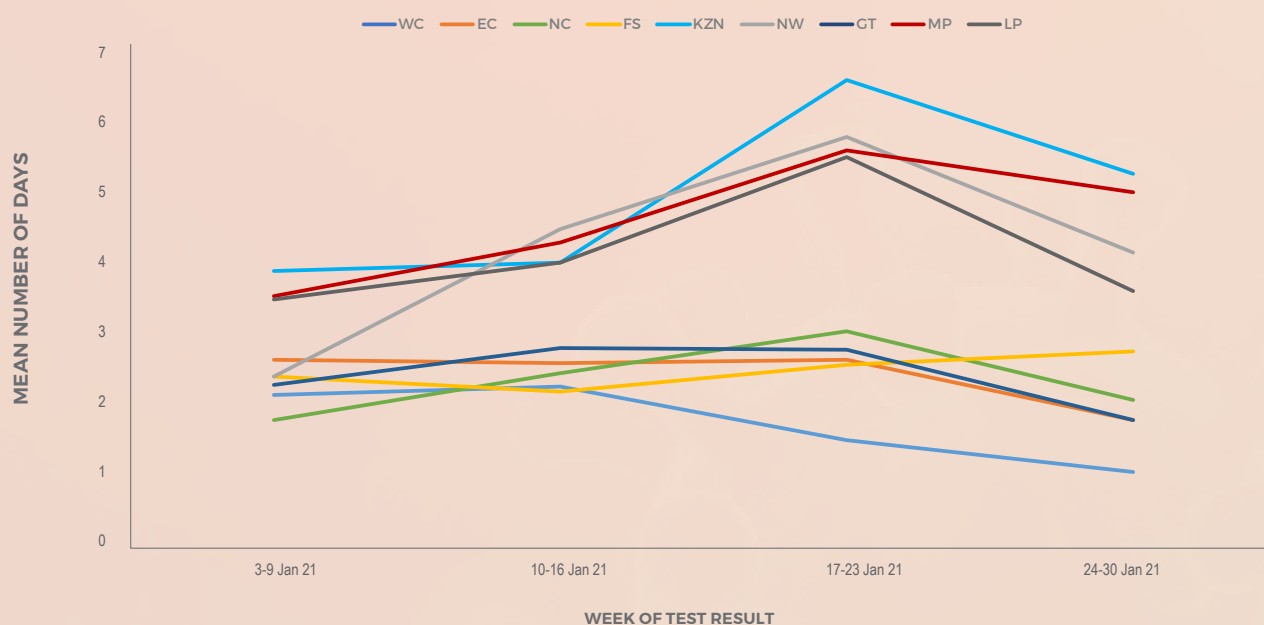
<sup>a</sup>Ratio of percentage testing positive (PTP) in the public sector to the private sector calculated as (no. of cases/total tests in public sector)/(no. of cases/total tests in private sector)

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**Figure 3.** Mean number of days between date of specimen collection and date of test result, by week of test result, South Africa, 3 – 30 January 2021

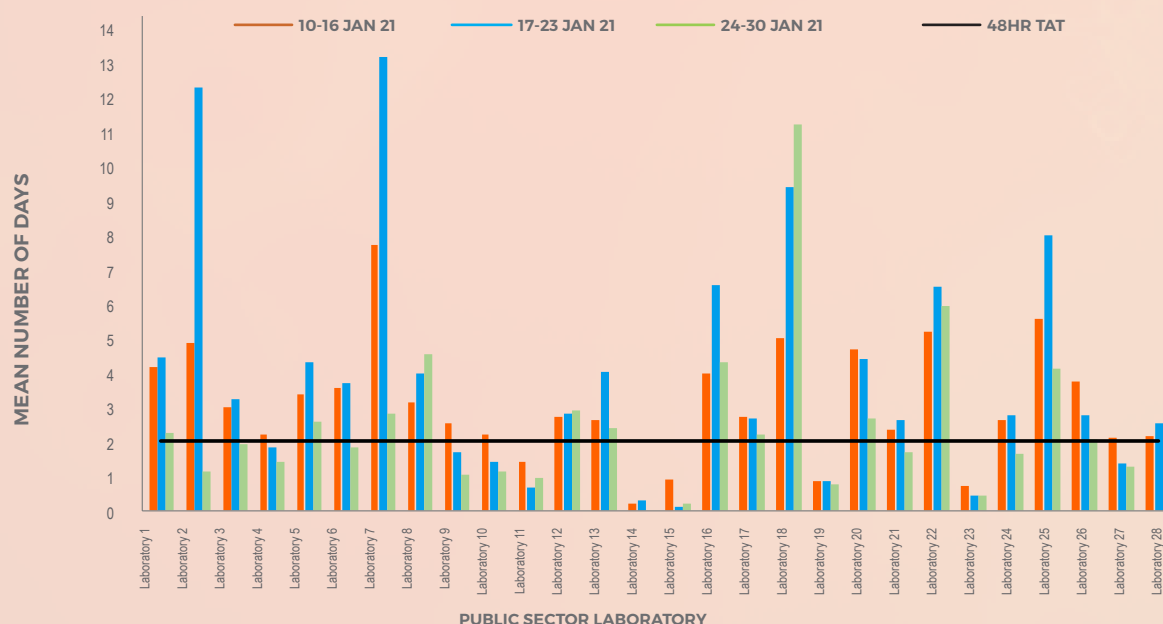


**Figure 4.** Mean number of days between date of specimen collection and date of test result, by week of test result and province, public sector, South Africa, 3 – 30 January 2021. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GT, Gauteng; NC, Northern Cape; NW, North West; MP, Mpumalanga; LP, Limpopo

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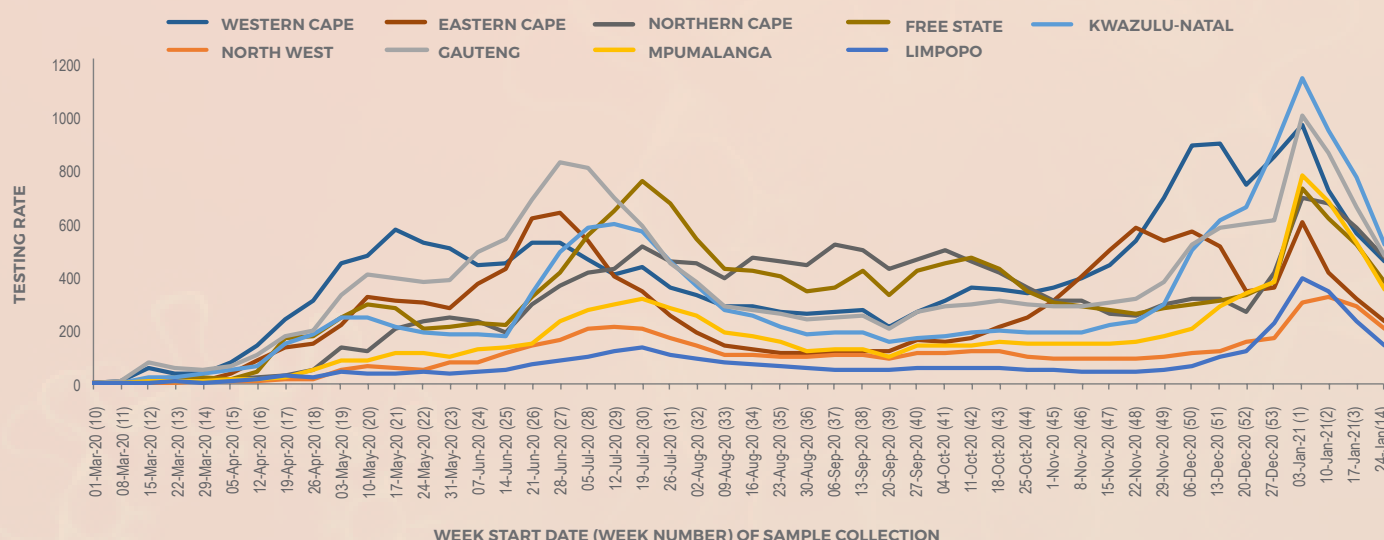


**Figure 5.** Mean number of days between date of specimen collection and date of test result, by public sector laboratory, 10 – 30 January 2021. The horizontal black line indicates 48-hour turnaround time (TAT).

## Testing by province

Gauteng (32.0%) performed the largest number of tests in week 4 of 2021, followed by KwaZulu-Natal (25.7%) and Western Cape (13.7%) provinces (Table 3). KwaZulu-Natal (513 per 100,000 persons), Gauteng (476 per 100,000 persons), Northern Cape (467 per 100,000 persons) and Western Cape (452 per 100,000 persons) provinces had the highest testing rates in week 4 of 2021 (Figure 6). Testing rates have decreased in all provinces over the past few weeks.

The percentage testing positive in week 4 of 2021 was highest in Limpopo (25.6%) and Mpumalanga (20.9%). Percentage testing positive was 10-20% in the Western Cape, Northern Cape, KwaZulu-Natal, North West, Free State and Gauteng, and was <10% in the Eastern Cape in week 4 of 2021 (Figure 7 and Table 3). Compared to the previous week, the percentage testing positive decreased in week 4 in all provinces ( $P \leq 0.001$ ). The percentage testing positive was higher than the national average, not weighted for population size, in the Northern Cape, Free State, KwaZulu-Natal, 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 – 30 January 2021



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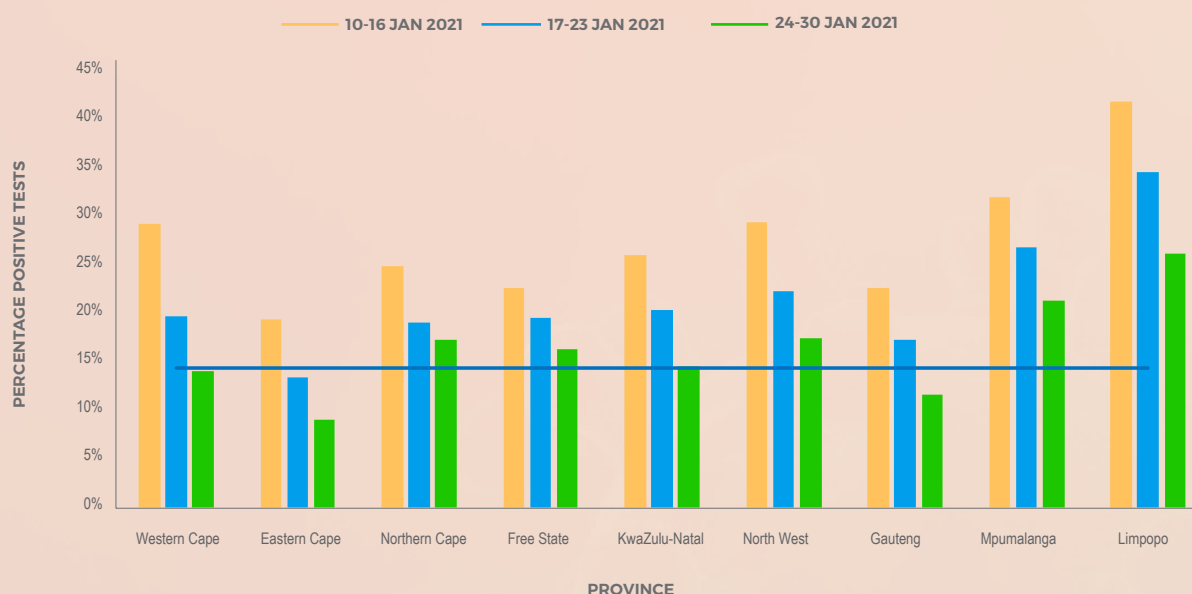
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**Table 3.** Weekly number of tests performed and positive tests, by province, South Africa, 10 – 30 January 2021

Province	Population <sup>a</sup>	10 – 16 Jan 21		17 – 23 Jan 21		24 – 30 Jan 21		Tests per 100,000 persons	Change in percentage positive <sup>b</sup>
		No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)		
Western Cape	7005741	50155	14311 (28.5)	38837	7469 (19.2)	31638	4356 (13.8)	452	-5.5%
Eastern Cape	6734001	27471	5205 (18.9)	21320	2785 (13.1)	15493	1365 (8.8)	230	-4.3%
Northern Cape	1292786	8648	2096 (24.2)	7483	1397 (18.7)	6039	1019 (16.9)	467	-1.8%
Free State	2928903	17967	3983 (22.2)	15122	2897 (19.2)	11090	1765 (15.9)	379	-3.2%
KwaZulu-Natal	11531628	108277	27503 (25.4)	88205	17555 (19.9)	59106	8423 (14.3)	513	-5.7%
North West	4108816	13215	3800 (28.8)	11810	2566 (21.7)	8503	1445 (17.0)	207	-4.7%
Gauteng	15488137	132601	29230 (22.0)	101508	17154 (16.9)	73746	8368 (11.3)	476	-5.6%
Mpumalanga	4679786	31451	9805 (31.2)	24306	6349 (26.1)	16229	3391 (20.9)	347	-5.2%
Limpopo	5852553	19942	8149 (40.9)	13628	4606 (33.8)	8464	2167 (25.6)	145	-8.2%
Unknown		196	9 (4.6)	121	6 (5.0)	68	5 (7.4)		
<b>Total</b>	<b>59622350</b>	<b>409923</b>	<b>104091 (25.4)</b>	<b>322340</b>	<b>62784 (19.5)</b>	<b>230376</b>	<b>32304 (14.0)</b>	<b>386</b>	<b>-5.5%</b>

<sup>a</sup> 2020 Mid-year population Statistics SA

<sup>b</sup> Current week compared to previous week



**Figure 7.** Weekly percentage testing positive, by province, South Africa, 10 – 30 January 2021. The horizontal blue line shows the national mean for week 4, beginning 24 January 2021.

## Testing in the public sector

In the public sector, the percentage testing positive decreased in the past week (20.8% in week 3 to 15.1% in week 4 of 2021,  $P < 0.001$ ) (Table 4). The percentage testing positive in week 4 of 2021 was highest in

Limpopo (31.2%) and Mpumalanga (21.7%). The percentage testing positive in the public sector remains higher than the national average, not weighted for population size, in the Western Cape, Northern Cape, Free State, North West, 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, 10 – 30 January 2021

Province	10-16 Jan 2021		17-23 Jan 2021		24-30 Jan 2021	
	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)
Western Cape	22273	6906 (31.0)	16349	3610 (22.1)	12282	2189 (17.8)
Eastern Cape	20043	3693 (18.4)	15789	2062 (13.1)	10493	880 (8.4)
Northern Cape	5654	1396 (24.7)	4870	983 (20.2)	3977	736 (18.5)
Free State	11654	2727 (23.4)	9337	1971 (21.1)	5967	1104 (18.5)
KwaZulu-Natal	66010	16670 (25.3)	58994	12044 (20.4)	39389	5677 (14.4)
North West	6760	1999 (29.6)	6642	1517 (22.8)	4278	733 (17.1)
Gauteng	46859	11330 (24.2)	37974	7213 (19.0)	26684	3250 (12.2)
Mpumalanga	14415	5108 (35.4)	11336	3205 (28.3)	6805	1479 (21.7)
Limpopo	8258	3799 (46.0)	5672	2157 (38.0)	3274	1020 (31.2)
Unknown	2	0 (0.0)	0	0 (0.0)	0	0 (0.0)
<b>Total</b>	<b>201928</b>	<b>53628 (26.6)</b>	<b>166963</b>	<b>34762 (20.8)</b>	<b>113149</b>	<b>17068 (15.1)</b>



**Figure 8.** Weekly percentage testing positive in the public sector, by province, South Africa, 10 – 30 January 2021. The horizontal blue line shows the national mean for week 4 of 2021, beginning 24 January 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 24-30 January 2021, with the highest proportion testing positive nationally. This week's list is dominated by facilities in Limpopo (9) and KwaZulu-Natal (8).

# COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 4 2021

**Table 5.1** Public sector healthcare facilities with a high proportion testing positive, 24-30 January 2021

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Limpopo	27	0.667 (0.489;0.844)
Facility 2	Limpopo	40	0.625 (0.475;0.775)
Facility 3	KwaZulu-Natal	31	0.613 (0.441;0.784)
Facility 4	KwaZulu-Natal	28	0.607 (0.426;0.788)
Facility 5	Free State	46	0.565 (0.422;0.708)
Facility 6	Limpopo	25	0.560 (0.365;0.755)
Facility 7	KwaZulu-Natal	45	0.533 (0.388;0.679)
Facility 8	Limpopo	40	0.525 (0.370;0.680)
Facility 9	Limpopo	27	0.519 (0.330;0.707)
Facility 10	KwaZulu-Natal	35	0.514 (0.349;0.680)
Facility 11	Eastern Cape	55	0.509 (0.377;0.641)
Facility 12	North West	76	0.500 (0.388;0.612)
Facility 13	KwaZulu-Natal	88	0.500 (0.396;0.604)
Facility 14	Free State	53	0.491 (0.356;0.625)
Facility 15	North West	33	0.485 (0.314;0.655)
Facility 16	Mpumalanga	44	0.477 (0.330;0.625)
Facility 17	Limpopo	40	0.475 (0.320;0.630)
Facility 18	Limpopo	38	0.474 (0.315;0.632)
Facility 19	KwaZulu-Natal	28	0.464 (0.280;0.649)
Facility 20	KwaZulu-Natal	81	0.457 (0.348;0.565)
Facility 21	Free State	48	0.438 (0.297;0.578)
Facility 22	KwaZulu-Natal	53	0.434 (0.301;0.567)
Facility 23	Limpopo	83	0.434 (0.327;0.540)
Facility 24	Limpopo	79	0.430 (0.321;0.540)
Facility 25	Mpumalanga	28	0.429 (0.245;0.612)

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 24-30 January 2021, with the highest proportion testing positive nationally. Private-sector facilities with high proportions testing positive are concentrated in KwaZulu-Natal (6), Mpumalanga (5) and Gauteng (4).

# COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 4 2021

**Table 5.2** Private sector healthcare facilities with a high proportion testing positive, 24-30 January 2021

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	KwaZulu-Natal	43	0.395 (0.249;0.541)
Facility 2	Western Cape	107	0.374 (0.282;0.466)
Facility 3	Gauteng	31	0.355 (0.186;0.523)
Facility 4	Gauteng	110	0.345 (0.257;0.434)
Facility 5	KwaZulu-Natal	27	0.333 (0.156;0.511)
Facility 6	Limpopo	284	0.331 (0.276;0.386)
Facility 7	Free State	65	0.323 (0.209;0.437)
Facility 8	Free State	112	0.321 (0.235;0.408)
Facility 9	Limpopo	73	0.315 (0.209;0.422)
Facility 10	Mpumalanga	64	0.313 (0.199;0.426)
Facility 11	Eastern Cape	29	0.310 (0.142;0.479)
Facility 12	North West	26	0.308 (0.130;0.485)
Facility 13	Limpopo	33	0.303 (0.146;0.460)
Facility 14	Northern Cape	83	0.301 (0.203;0.400)
Facility 15	Gauteng	37	0.297 (0.150;0.445)
Facility 16	KwaZulu-Natal	87	0.287 (0.192;0.382)
Facility 17	KwaZulu-Natal	60	0.283 (0.169;0.397)
Facility 18	Mpumalanga	469	0.281 (0.241;0.322)
Facility 19	KwaZulu-Natal	175	0.280 (0.213;0.347)
Facility 20	Mpumalanga	61	0.279 (0.166;0.391)
Facility 21	Mpumalanga	313	0.272 (0.222;0.321)
Facility 22	KwaZulu-Natal	82	0.268 (0.172;0.364)
Facility 23	Mpumalanga	159	0.264 (0.196;0.333)
Facility 24	Western Cape	38	0.263 (0.123;0.403)
Facility 25	Gauteng	73	0.260 (0.160;0.361)

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 83% of private testing facilities) in the week from 24-30 January 2021 have been located within the spatial framework of the health districts and health sub-districts (in the metros). The results, for the 25 municipalities and metropolitan health sub-districts showing the greatest proportions testing positive (PTP) are shown in Table 6. Districts showing the greatest proportions testing positive are concentrated in KwaZulu-Natal (7 districts), the Western Cape and Limpopo (5 districts each).

No districts showed an adjusted proportion testing positive greater than 50% this week, and only two exceeded 40%. The proportion of tests returned positive fell significantly in three districts (2 in KwaZulu-Natal, and one in Limpopo).



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SOUTH AFRICA WEEK 4 2021

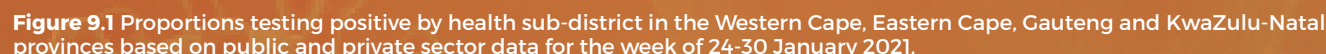
**Table 6.** Health sub-districts with the highest proportion testing positive based on public and private sector data for the week of 24-30 January 2021

Health district or sub-district	Province	PTP (95% CI)	Previous week
Ezingoleni	KwaZulu-Natal	0.465 (0.384-0.546)	0.545 (0.467-0.624)
Greater Letaba	Limpopo	0.446 (0.318-0.574)	0.454 (0.361-0.546)
Maquassi Hills	NorthWest	0.387 (0.311-0.463)	0.369 (0.313-0.426)
Cederberg	Western Cape	0.373 (0.265-0.481)	0.434 (0.345-0.523)
Ratlou	NorthWest	0.368 (0.232-0.505)	...
Umzumbe	KwaZulu-Natal	0.367 (0.312-0.423)	0.514 (0.465-0.563)
Mtubatuba	KwaZulu-Natal	0.364 (0.296-0.432)	0.465 (0.418-0.511)
Matzikama	Western Cape	0.359 (0.292-0.425)	0.351 (0.300-0.402)
Dannhauser	KwaZulu-Natal	0.344 (0.269-0.419)	0.517 (0.427-0.606)
Ndwedwe	KwaZulu-Natal	0.344 (0.300-0.387)	0.388 (0.349-0.426)
Makhuduthamaga	Limpopo	0.325 (0.260-0.390)	0.507 (0.439-0.576)
Richtersveld	Northern Cape	0.322 (0.222-0.423)	0.291 (0.218-0.364)
Albert Luthuli	Mpumalanga	0.319 (0.266-0.372)	0.274 (0.232-0.316)
Makhado	Limpopo	0.319 (0.281-0.357)	0.372 (0.342-0.402)
Mafube	Free State	0.312 (0.228-0.396)	0.367 (0.277-0.458)
Pixley Ka Seme	Mpumalanga	0.299 (0.249-0.350)	0.345 (0.304-0.386)
Blouberg	Limpopo	0.298 (0.185-0.412)	0.359 (0.273-0.445)
Mandeni	KwaZulu-Natal	0.290 (0.247-0.333)	0.339 (0.306-0.372)
Langeberg	Western Cape	0.288 (0.202-0.374)	0.298 (0.234-0.361)
Bergrivier	Western Cape	0.288 (0.230-0.345)	0.276 (0.230-0.322)
Nketoana	Free State	0.286 (0.231-0.340)	0.322 (0.270-0.373)
Ubuhlebezwe	KwaZulu-Natal	0.285 (0.231-0.339)	0.340 (0.294-0.386)
Kannaland	Western Cape	0.283 (0.139-0.427)	0.350 (0.228-0.473)
Thaba Chweu	Mpumalanga	0.283 (0.238-0.327)	0.339 (0.305-0.373)
Modimolle	Limpopo	0.280 (0.144-0.415)	0.255 (0.192-0.318)

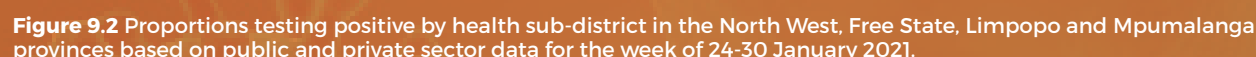
95% CI: 95% confidence interval; PTP: adjusted positive test proportion; Elements marked in **red** have current week proportions testing positive that are **higher** than, and CIs that do not overlap with, the previous week proportions and CIs. Elements marked in **blue** have current week proportions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

SOUTH AFRICA WEEK 4 2021

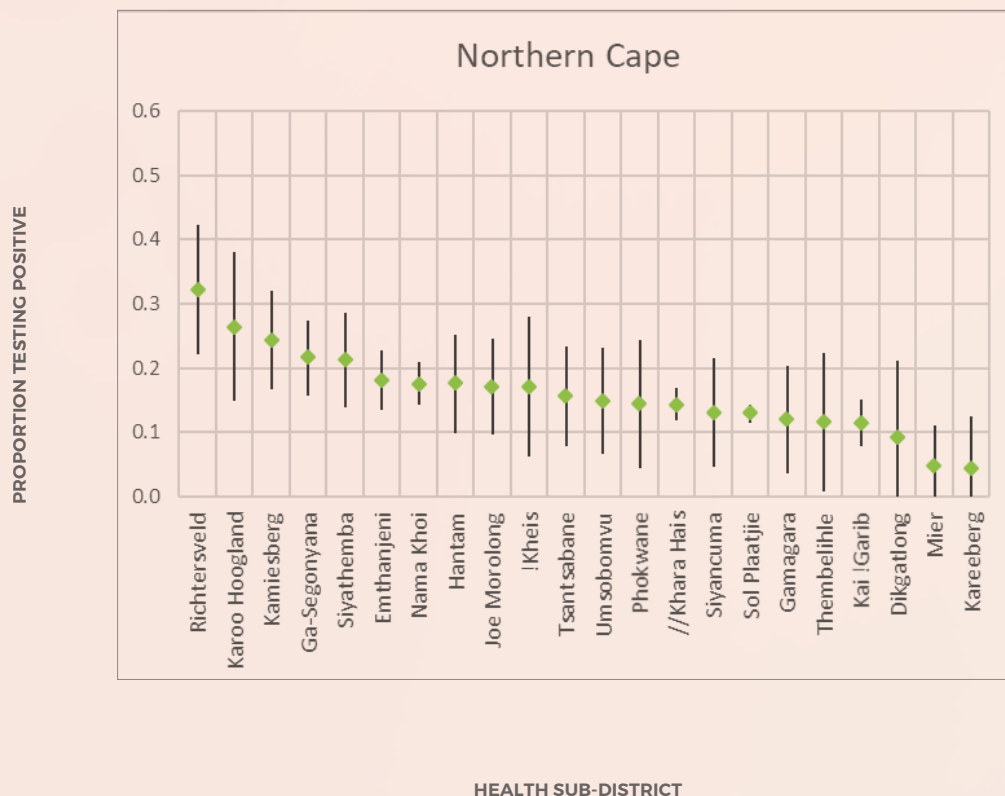


SOUTH AFRICA WEEK 4 2021



# COVID-19 TESTING SUMMARY

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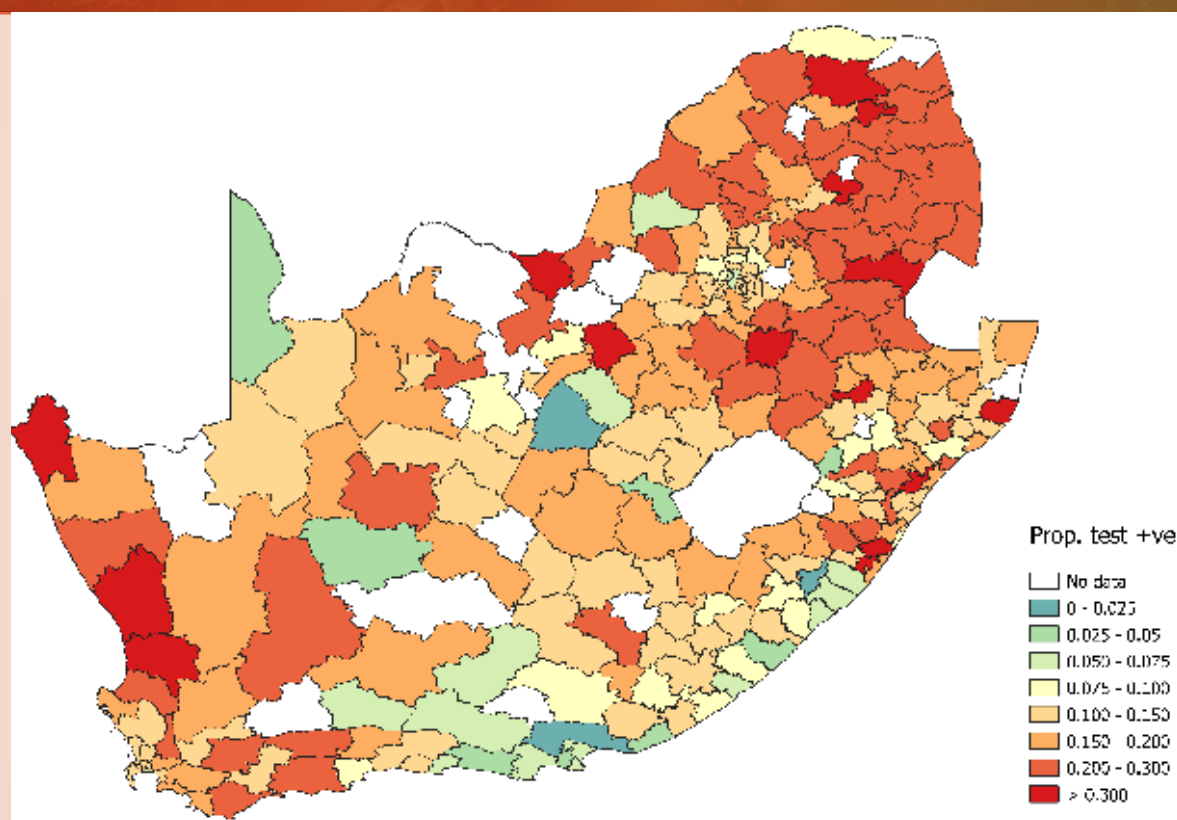
**Figure 9.3** Proportions testing positive by health sub-districts in the Northern Cape Province based on public and private sector data for the week of 24-30 January 2021.

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).

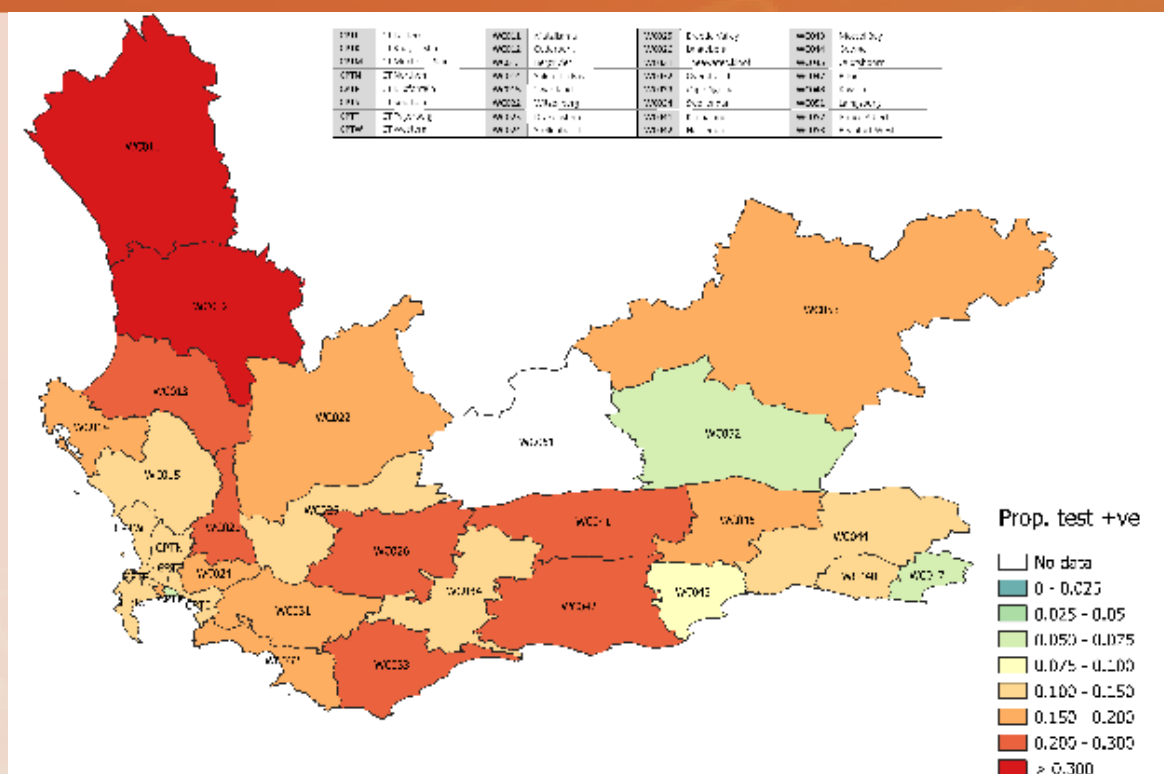


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**Figure 10.** Proportion testing positive by health sub-district in South Africa for the week of 24-30 January 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.



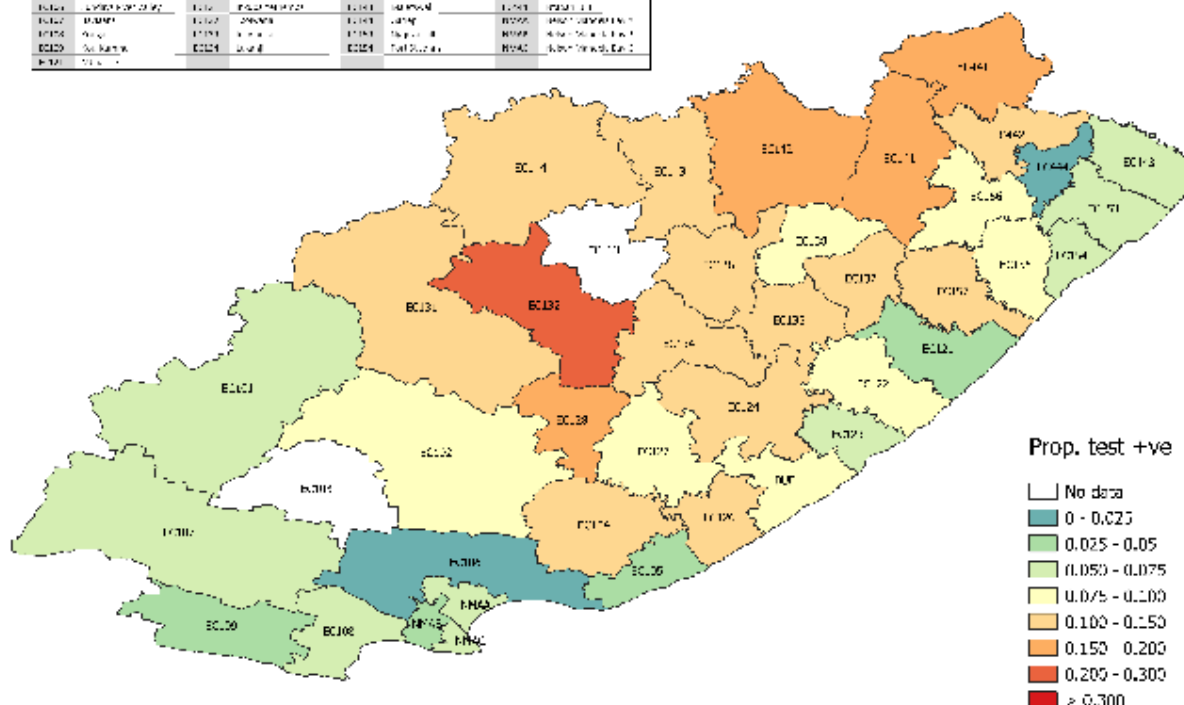
**Figure 11.** Proportion testing positive by health sub-district in the Western Cape province for the week of 24-30 January 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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Sub	Sub	Sub	Sub	Sub	Sub
EC101	EC102	EC103	EC104	EC105	EC106
EC107	EC108	EC109	EC110	EC111	EC112
EC113	EC114	EC115	EC116	EC117	EC118
EC119	EC120	EC121	EC122	EC123	EC124
EC125	EC126	EC127	EC128	EC129	EC130
EC131	EC132	EC133	EC134	EC135	EC136
EC137	EC138	EC139	EC140	EC141	EC142
EC143	EC144	EC145	EC146	EC147	EC148
EC149	EC150	EC151	EC152	EC153	EC154
EC155	EC156	EC157	EC158	EC159	EC160
EC161	EC162	EC163	EC164	EC165	EC166
EC167	EC168	EC169	EC170	EC171	EC172
EC173	EC174	EC175	EC176	EC177	EC178
EC179	EC180	EC181	EC182	EC183	EC184
EC185	EC186	EC187	EC188	EC189	EC190
EC191	EC192	EC193	EC194	EC195	EC196
EC197	EC198	EC199	EC200	EC201	EC202
EC203	EC204	EC205	EC206	EC207	EC208
EC209	EC210	EC211	EC212	EC213	EC214
EC215	EC216	EC217	EC218	EC219	EC220
EC221	EC222	EC223	EC224	EC225	EC226
EC227	EC228	EC229	EC230	EC231	EC232
EC233	EC234	EC235	EC236	EC237	EC238
EC239	EC240	EC241	EC242	EC243	EC244
EC245	EC246	EC247	EC248	EC249	EC250
EC251	EC252	EC253	EC254	EC255	EC256
EC257	EC258	EC259	EC260	EC261	EC262
EC263	EC264	EC265	EC266	EC267	EC268
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EC287	EC288	EC289	EC290	EC291	EC292
EC293	EC294	EC295	EC296	EC297	EC298
EC299	EC300	EC301	EC302	EC303	EC304
EC305	EC306	EC307	EC308	EC309	EC310
EC311	EC312	EC313	EC314	EC315	EC316
EC317	EC318	EC319	EC320	EC321	EC322
EC323	EC324	EC325	EC326	EC327	EC328
EC329	EC330	EC331	EC332	EC333	EC334
EC335	EC336	EC337	EC338	EC339	EC340
EC341	EC342	EC343	EC344	EC345	EC346
EC347	EC348	EC349	EC350	EC351	EC352
EC353	EC354	EC355	EC356	EC357	EC358
EC359	EC360	EC361	EC362	EC363	EC364
EC365	EC366	EC367	EC368	EC369	EC370
EC371	EC372	EC373	EC374	EC375	EC376
EC377	EC378	EC379	EC380	EC381	EC382
EC383	EC384	EC385	EC386	EC387	EC388
EC389	EC390	EC391	EC392	EC393	EC394
EC395	EC396	EC397	EC398	EC399	EC400
EC401	EC402	EC403	EC404	EC405	EC406
EC407	EC408	EC409	EC410	EC411	EC412
EC413	EC414	EC415	EC416	EC417	EC418
EC419	EC420	EC421	EC422	EC423	EC424
EC425	EC426	EC427	EC428	EC429	EC430
EC431	EC432	EC433	EC434	EC435	EC436
EC437	EC438	EC439	EC440	EC441	EC442
EC443	EC444	EC445	EC446	EC447	EC448
EC449	EC450	EC451	EC452	EC453	EC454
EC455	EC456	EC457	EC458	EC459	EC460
EC461	EC462	EC463	EC464	EC465	EC466
EC467	EC468	EC469	EC470	EC471	EC472
EC473	EC474	EC475	EC476	EC477	EC478
EC479	EC480	EC481	EC482	EC483	EC484
EC485	EC486	EC487	EC488	EC489	EC490
EC491	EC492	EC493	EC494	EC495	EC496
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EC509	EC510	EC511	EC512	EC513	EC514
EC515	EC516	EC517	EC518	EC519	EC520
EC521	EC522	EC523	EC524	EC525	EC526
EC527	EC528	EC529	EC530	EC531	EC532
EC533	EC534	EC535	EC536	EC537	EC538
EC539	EC540	EC541	EC542	EC543	EC544
EC545	EC546	EC547	EC548	EC549	EC550
EC551	EC552	EC553	EC554	EC555	EC556
EC557	EC558	EC559	EC560	EC561	EC562
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EC587	EC588	EC589	EC590	EC591	EC592
EC593	EC594	EC595	EC596	EC597	EC598
EC599	EC600	EC601	EC602	EC603	EC604
EC605	EC606	EC607	EC608	EC609	EC610
EC611	EC612	EC613	EC614	EC615	EC616
EC617	EC618	EC619	EC620	EC621	EC622
EC623	EC624	EC625	EC626	EC627	EC628
EC629	EC630	EC631	EC632	EC633	EC634
EC635	EC636	EC637	EC638	EC639	EC640
EC641	EC642	EC643	EC644	EC645	EC646
EC647	EC648	EC649	EC650	EC651	EC652
EC653	EC654	EC655	EC656	EC657	EC658
EC659	EC660	EC661	EC662	EC663	EC664
EC665	EC666	EC667	EC668	EC669	EC670
EC671	EC672	EC673	EC674	EC675	EC676
EC677	EC678	EC679	EC680	EC681	EC682
EC683	EC684	EC685	EC686	EC687	EC688
EC689	EC690	EC691	EC692	EC693	EC694
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EC725	EC726	EC727	EC728	EC729	EC730
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EC785	EC786	EC787	EC788	EC789	EC790
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EC797	EC798	EC799	EC800	EC801	EC802
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EC809	EC810	EC811	EC812	EC813	EC814
EC815	EC816	EC817	EC818	EC819	EC820
EC821	EC822	EC823	EC824	EC825	EC826
EC827	EC828	EC829	EC830	EC831	EC832
EC833	EC834	EC835	EC836	EC837	EC838
EC839	EC840	EC841	EC842	EC843	EC844
EC845	EC846	EC847	EC848	EC849	EC850
EC851	EC852	EC853	EC854	EC855	EC856
EC857	EC858	EC859	EC860	EC861	EC862
EC863	EC864	EC865	EC866	EC867	EC868
EC869	EC870	EC871	EC872	EC873	EC874
EC875	EC876	EC877	EC878	EC879	EC880
EC881	EC882	EC883	EC884	EC885	EC886
EC887	EC888	EC889	EC890	EC891	EC892
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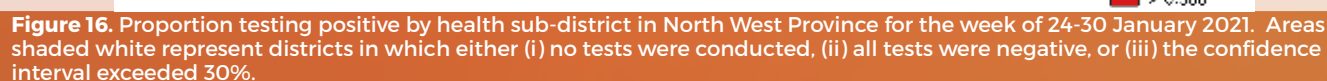
**Figure 12.** Proportion testing positive by health sub-district in the Eastern Cape province for the week of 24-30 January 2021. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

Q101	Q102	Q103	Q104	Q105	Q106
Q107	Q108	Q109	Q110	Q111	Q112
Q113	Q114	Q115	Q116	Q117	Q118
Q119	Q120	Q121	Q122	Q123	Q124
Q125	Q126	Q127	Q128	Q129	Q130
Q131	Q132	Q133	Q134	Q135	Q136
Q137	Q138	Q139	Q140	Q141	Q142
Q143	Q144	Q145	Q146	Q147	Q148
Q149	Q150	Q151	Q152	Q153	Q154
Q155	Q156	Q157	Q158	Q159	Q160
Q161	Q162	Q163	Q164	Q165	Q166
Q167	Q168	Q169	Q170	Q171	Q172
Q173	Q174	Q175	Q176	Q177	Q178
Q179	Q180	Q181	Q182	Q183	Q184
Q185	Q186	Q187	Q188	Q189	Q190
Q191	Q192	Q193	Q194	Q195	Q196
Q197	Q198	Q199	Q200	Q201	Q202
Q203	Q204	Q205	Q206	Q207	Q208
Q209	Q210	Q211	Q212	Q213	Q214
Q215	Q216	Q217	Q218	Q219	Q220
Q221	Q222	Q223	Q224	Q225	Q226
Q227	Q228	Q229	Q230	Q231	Q232
Q233	Q234	Q235	Q236	Q237	Q238
Q239	Q240	Q241	Q242	Q243	Q244
Q245	Q246	Q247	Q248	Q249	Q250
Q251	Q252	Q253	Q254	Q255	Q256
Q257	Q258	Q259	Q260	Q261	Q262
Q263	Q264	Q265	Q266	Q267	Q268
Q269	Q270	Q271	Q272	Q273	Q274
Q275	Q276	Q277	Q278	Q279	Q280
Q281	Q282	Q283	Q284	Q285	Q286
Q287	Q288	Q289	Q290	Q291	Q292
Q293	Q294	Q295	Q296	Q297	Q298
Q299	Q300	Q301	Q302	Q303	Q304
Q305	Q306	Q307	Q308	Q309	Q310
Q311	Q312	Q313	Q314	Q315	Q316
Q317	Q318	Q319	Q320	Q321	Q322
Q323	Q324	Q325	Q326	Q327	Q328
Q329	Q330	Q331	Q332	Q333	Q334
Q335	Q336	Q337	Q338	Q339	Q340
Q341	Q342	Q343	Q344	Q345	Q346
Q347	Q348	Q349	Q350	Q351	Q352
Q353	Q354	Q355	Q356	Q357	Q358
Q359	Q360	Q361	Q362	Q363	Q364
Q365	Q366	Q367	Q368	Q369	Q370
Q371	Q372	Q373	Q374	Q375	Q376
Q377	Q378	Q379	Q380	Q381	Q382
Q383	Q384	Q385	Q386	Q387	Q388
Q389	Q390	Q391	Q392	Q393	Q394
Q395	Q396	Q397	Q398	Q399	Q400

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SOUTH AFRICA WEEK 4 2021

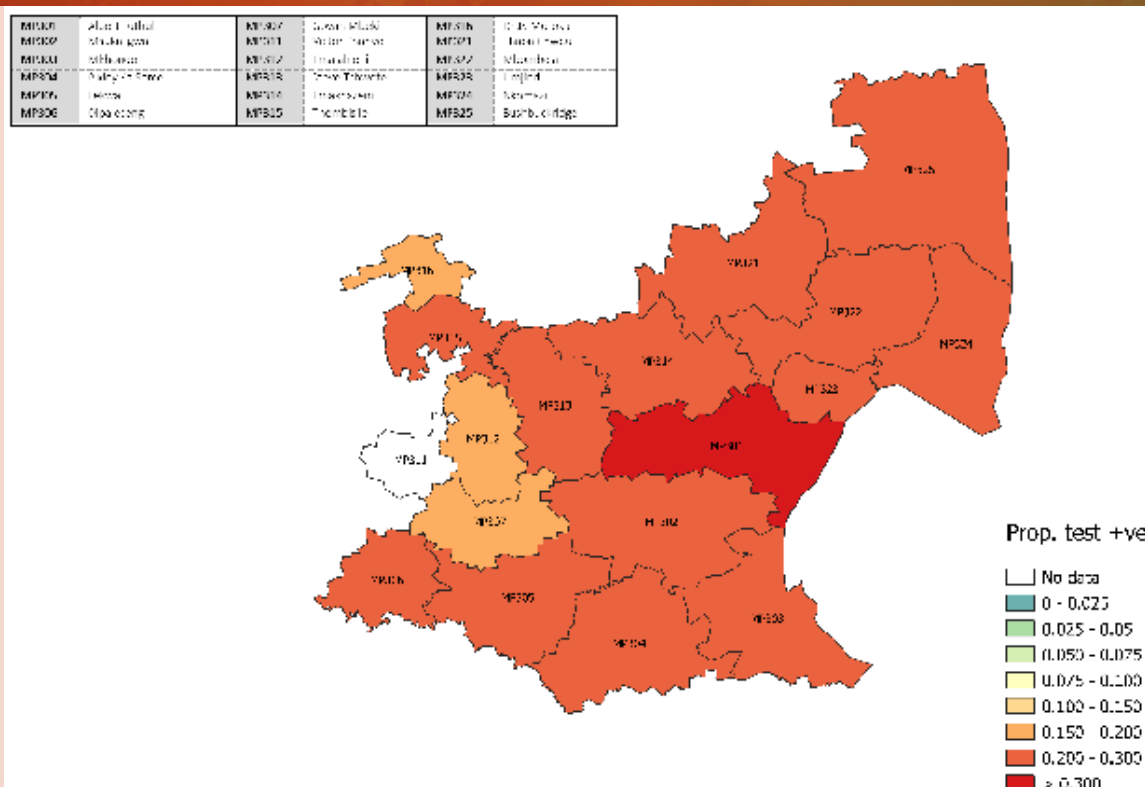




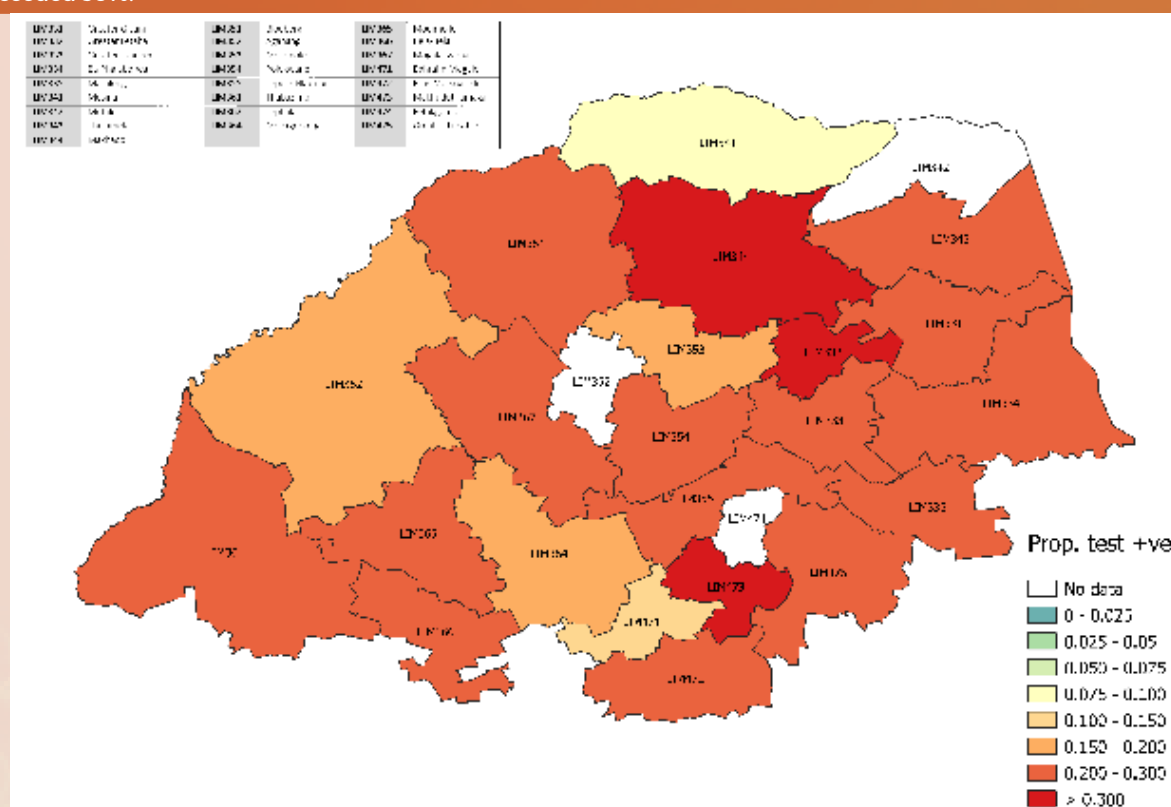
# COVID-19 TESTING SUMMARY

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**Figure 18.** Proportion testing positive by health sub-district in Mpumalanga Province for the week of 24-30 January 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 24-30 January 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 4 of 2021, 30.2% of tests were performed for hospitalised patients; 39.0% in the public sector and 23.6% in the private sector (Figure 20). The percentage testing positive decreased among both

inpatients and outpatients in the past week, and in week 4 was similar among outpatients (14.6%) and inpatients (15.3%) (Figure 21). In week 4 of 2021 the mean laboratory turnaround time in the public sector continued to be lower for inpatients (3.4 days) compared to outpatients (3.7 days) (Figure 22).

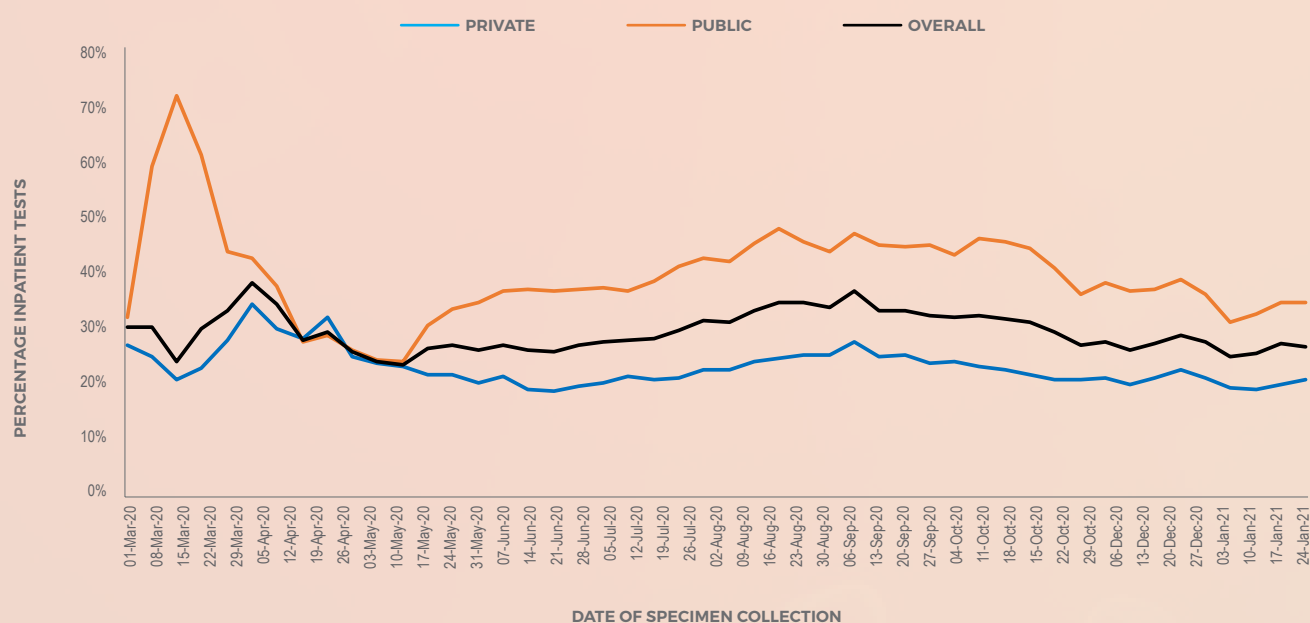


Figure 20. Percentage of inpatient tests performed by health sector, 1 March 2020 – 30 January 2021

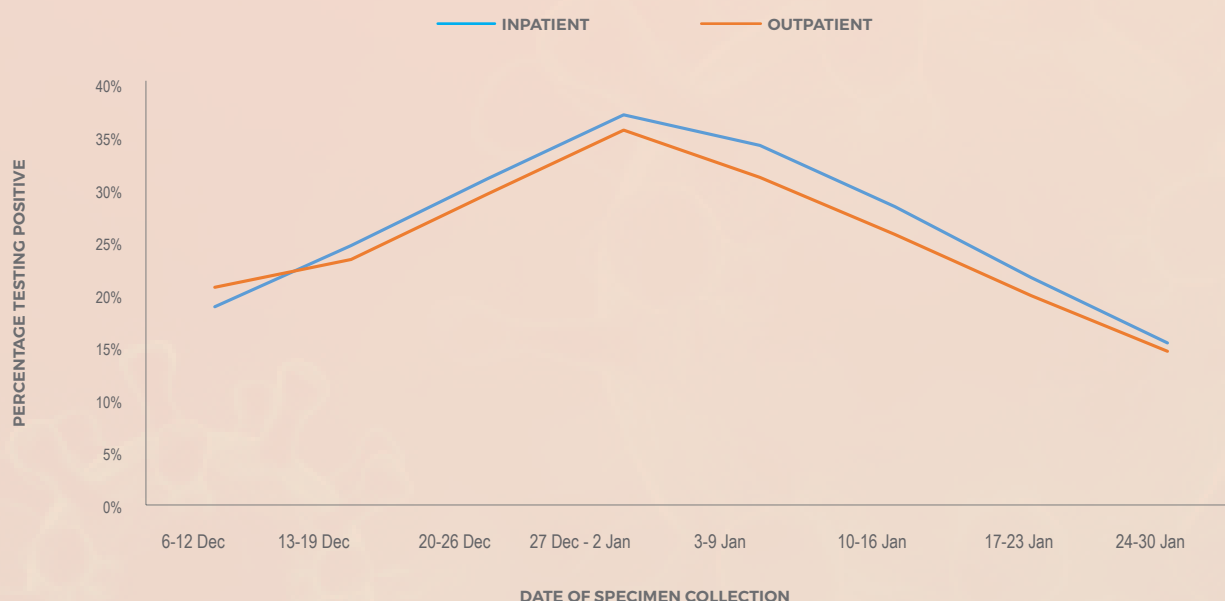
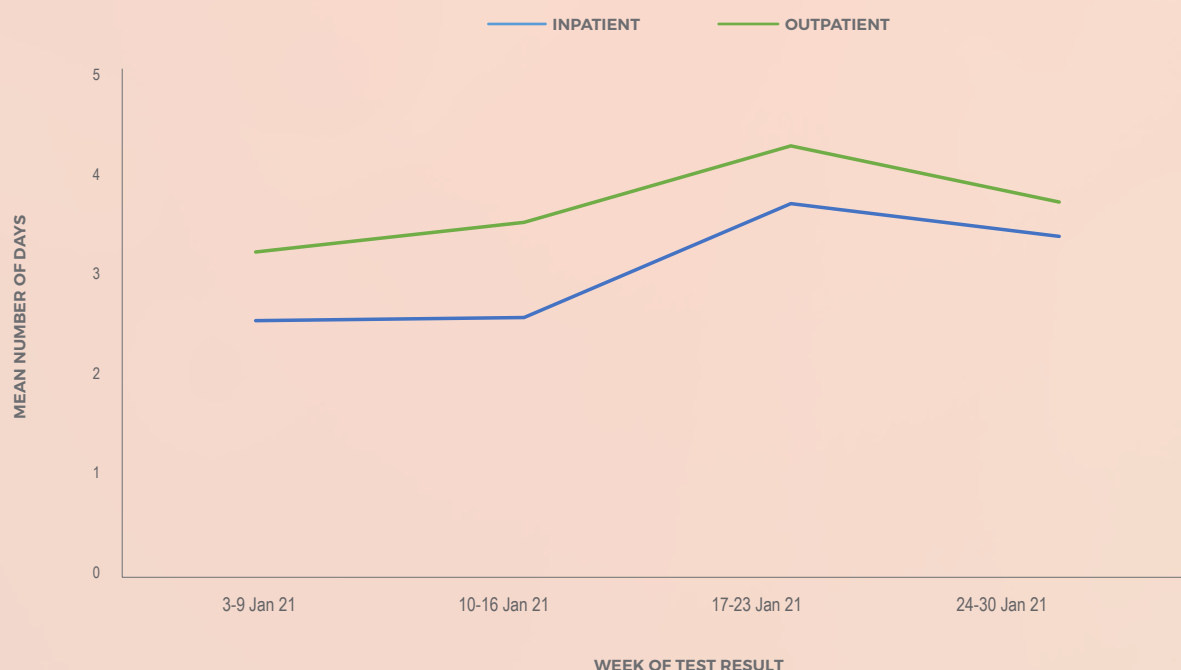


Figure 21. Percentage testing positive by patient admission status, 6 December 2020 – 30 January 2021

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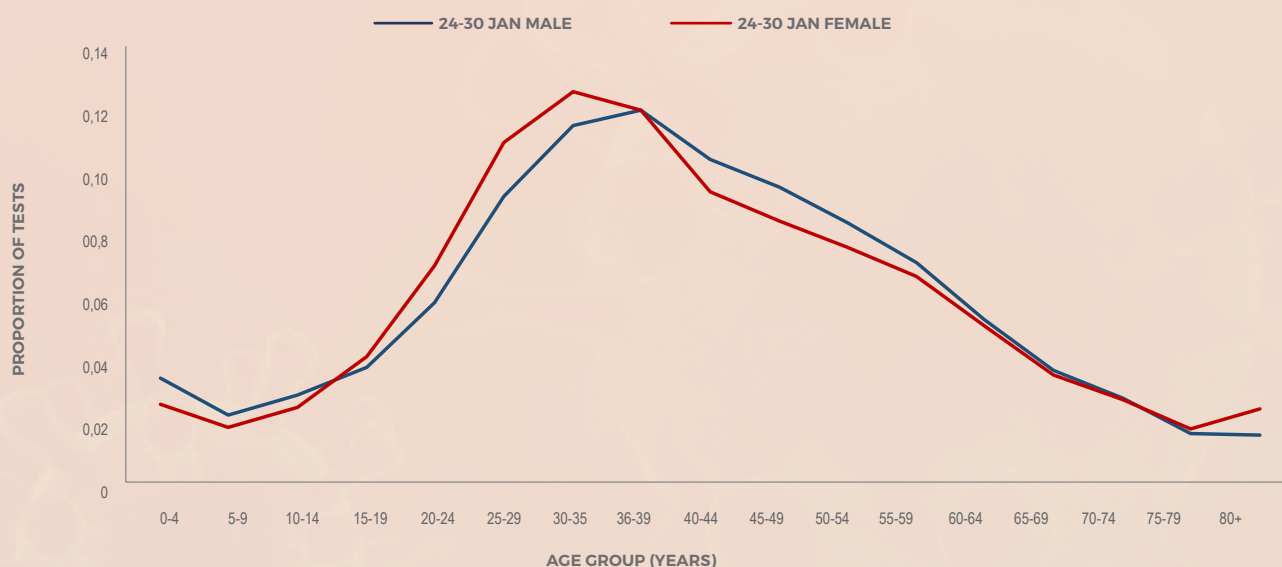


**Figure 22.** Mean number of days between date of specimen collection and date of test result in the public sector by patient admission status, 3 – 30 January 2021

## Testing by age and sex

The mean age of individuals tested in week 4 of 2021 was 40.1 years, and was similar among females (40.2 years) and males (40.1 years). As in the previous few weeks, the majority of tests were performed in individuals in the 25-44 years' age groups (Figure 23).

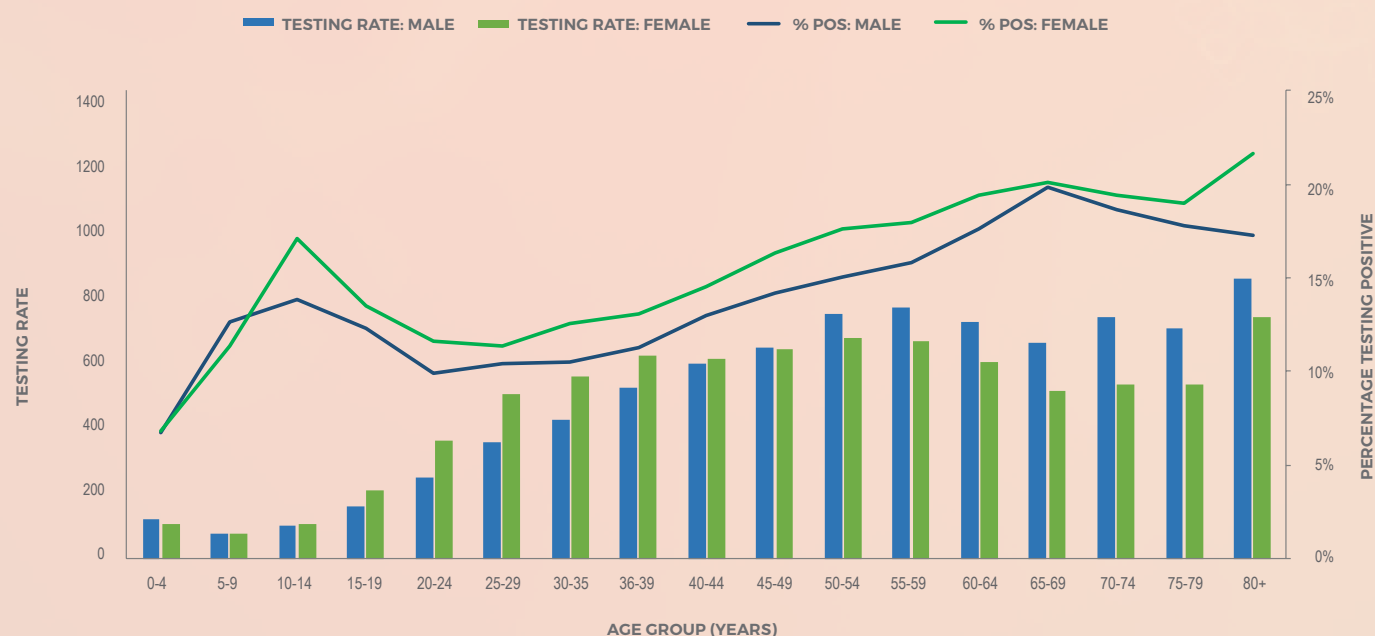
In week 4, the testing rate in males was 355 per 100,000 persons and in females was 399 per 100,000 persons (Figure 24). The highest testing rates were observed in individuals  $\geq 80$  years of age (761 per 100,000 persons) in week 4. The percentage testing positive increased with increasing age, with a peak in the 10-14 year age group, and was higher in females compared to males (Figure 24).



**Figure 23.** Proportion of tests by age group and sex, South Africa, 24 - 30 January 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 4, 24 - 30 January 2021

## Testing by test type

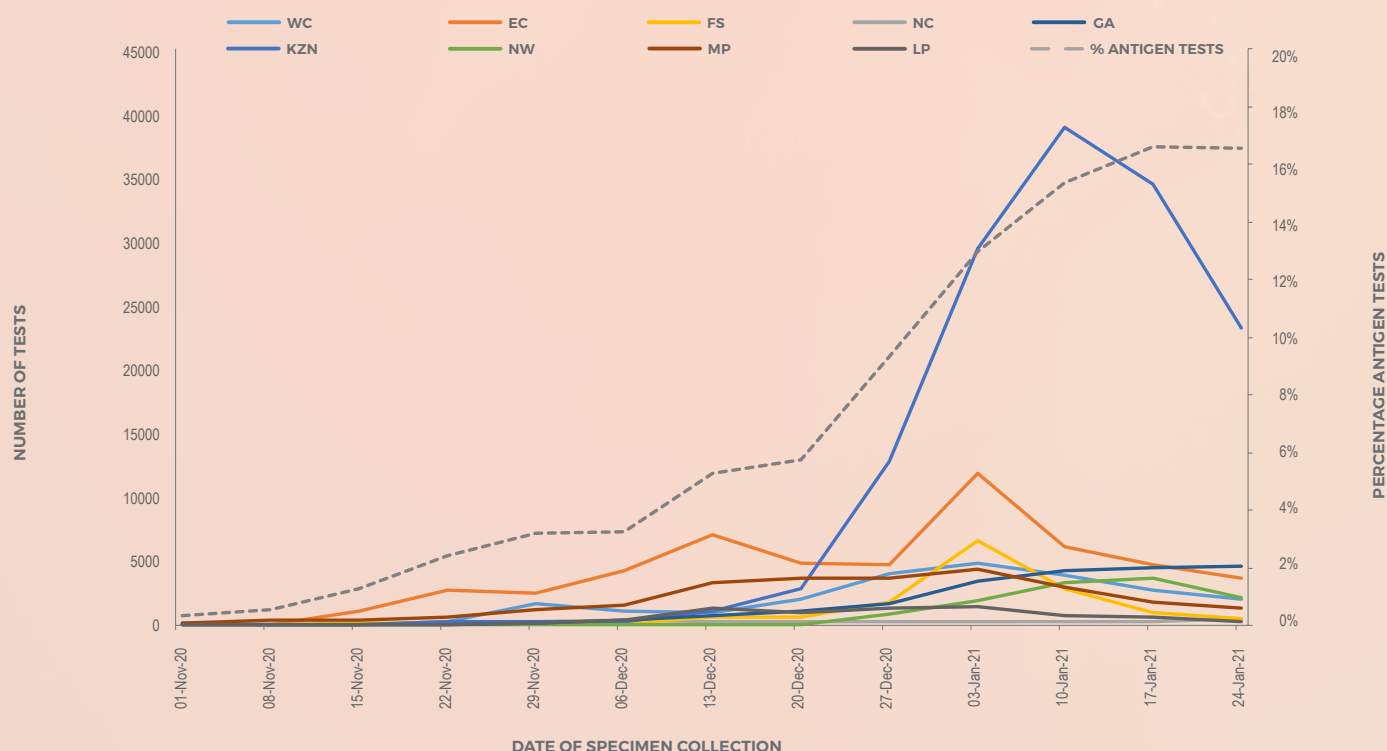
Testing for SARS-CoV-2 using rapid antigen tests was initiated towards the end of October 2020. Up to the end of week 4 of 2021, 306,455 antigen tests had been performed (38,430 in week 4). The percentage of antigen tests of all tests conducted has increased over recent weeks from 0.1% in week 44 of 2020 to 16.6% in week 4 of 2021. The majority of antigen tests have been performed in KwaZulu-Natal (n=143,907, 47.0%) and Eastern Cape (n=53,601, 17.5%) provinces

(Figure 25). Over recent weeks the percentage testing positive was higher for PCR tests compared to antigen tests, likely due to the lower sensitivity of antigen tests and the setting in which they were used (Figure 26). Not all antigen tests are included in this report, efforts are ongoing to improve completeness.

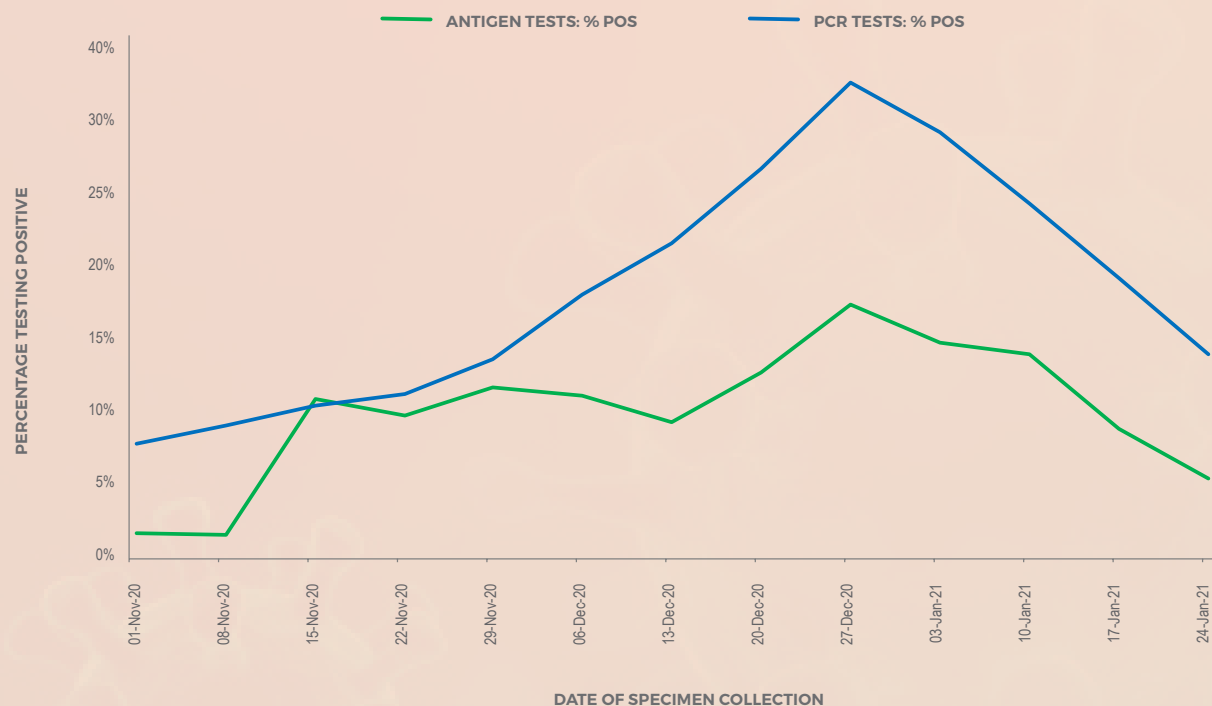


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**Figure 25.** Number of antigen tests by province, and overall percentage antigen tests, South Africa, 1 November 2020 – 30 January 2021. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GA, Gauteng; NC, Northern Cape; NW, North 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 – 30 January 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 were highest in the first wave of infections in week 28 of 2020 (n=307,900), and in the second wave of infections in week 1 of 2021 (n=492,346). The number of tests performed in week 4 of 2021 (n=230,376) was lower than the previous few weeks. Gauteng (32.0%) performed the largest number of tests in week 4 of 2021, followed by KwaZulu-Natal (25.7%) and Western Cape (13.7%) provinces. KwaZulu-Natal (513 per 100,000 persons), Gauteng (476 per 100,000 persons), Northern Cape (467 per 100,000 persons) and Western Cape (452 per 100,000 persons) provinces had the highest testing rates in week 4 of 2021. The percentage of antigen tests of all tests performed has increased since antigen testing was implemented towards the end of October 2020, and accounted for 16.6% of all tests in week 4. The overall laboratory turnaround time for PCR tests in week 4 of 2021 was 2.0 days; 3.2 days in the public sector and <1 day in the private sector.

In the first wave of infections the percentage testing positive peaked at 29.7% in week 29 of 2020, and in the second wave of infections the percentage testing positive peaked at 34.9% in week 53 of 2020. In week 4 of 2021 the percentage testing positive was 14.0%, lower than has been observed in the previous few weeks. The percentage testing positive in week 4 of 2021 was highest in Limpopo (25.6%) and Mpumalanga (20.9%). Percentage testing positive was 10-20% in the Western Cape, Northern Cape, KwaZulu-Natal, North West, Free State and Gauteng, and was <10% in the Eastern Cape in week 4 of 2021. Compared to the previous week, in week 4 the percentage testing positive decreased in all provinces. Districts showing the greatest proportions testing positive in week 4 were concentrated in KwaZulu-Natal (7 districts), the Western Cape and Limpopo (5 districts each).