

SOUTH AFRICA WEEK 50 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 18 December 2021 (Week 50 of 2021).

HIGHLIGHTS

- The number of tests reported in week 50 of 2021 (n=383,161: 298,569 PCR and 84,592 antigen tests) was lower than the number of tests reported in the previous week.
- In week 50 the testing rate was highest in the Western Cape (931 per 100,000 persons) and lowest in Limpopo (194 per 100,000 persons).
- In week 50 the percentage testing positive was 36.7%, which was 1.0% higher than the previous week and the highest since the start of the epidemic.
- In week 50, compared to the previous week, the percentage testing positive increased in the Western Cape, Eastern Cape, Northern Cape, Free State and KwaZulu-Natal. The percentage testing positive decreased in Gauteng and the North West, and was unchanged in Mpumalanga and Limpopo.
- The percentage testing positive in week 50 was >38% in the Western Cape, Eastern Cape, Northern Cape, Free State, KwaZulu-Natal, North West, Mpumalanga and Limpopo provinces. The percentage testing positive was lowest in Gauteng (29.1%).

SOUTH AFRICA | WEEK 50 2021

Executive Summary:

- In the period 1 March 2020 through 18 December 2021, 20,558,765 tests for SARS-CoV-2 have been reported nationally: 17,463,506 PCR and 3,095,259 antigen tests.
- The number of tests reported in week 50 of 2021 (n=383,161: 298,569 PCR and 84,592 antigen tests) was lower than the number of tests reported in the previous week.
- Gauteng reported the largest proportion of tests (34.9%), followed by KwaZulu-Natal (20.7%) and Western Cape (17.0%).
- The overall testing rate decreased from 797 per 100,000 persons in week 49 to 643 per 100,000 persons in week 50.
- · In week 50 the testing rate increased in the Northern Cape province, and decreased or was unchanged in all other provinces. A notable decrease was observed in Gauteng, from 1349 per 100,000 persons in week 49 to 862 per 100,000 persons in week 50. The testing rate was highest in the Western Cape (931 per 100,000 persons) and lowest in Limpopo (194 per 100,000 persons).
- The testing rate in week 50 was highest in the 50-54 years age group (1094 per 100,000 persons).
- In week 50 the percentage testing positive was 36.7%, which was 1.0% higher than the previous week (P<0.001) and the highest percentage testing positive since the start of the epidemic.
- In the past week, the percentage testing positive increased by 1.4% in the public sector (38.4% in week 49 to 39.8% in week 50, P<0.001) and by 0.9% in the private sector (33.7% in week 49 to 34.6% in week 50, P<0.001).
- In week 50, compared to the previous week, the percentage testing positive increased in

- the Western Cape, Eastern Cape, Northern Cape, Free State and KwaZulu-Natal. The percentage testing positive decreased in Gauteng and the North West, and was unchanged in Mpumalanga and Limpopo.
- The percentage testing positive in week 50 was >38% in the Western Cape, Eastern Cape, Northern Cape, Free State, KwaZulu-Natal, North West, Mpumalanga and Limpopo provinces. The percentage testing positive was lowest in Gauteng (29.1%).
- The percentage testing positive was >30% across all age groups ≥5 years, and was highest in the 10-14 years age group (39.1%).
- Health sub-districts showing the highest percentage testing positive were spatially diffuse: 6 of the 25 districts with the highest percentage testing positive were in the Northern Cape; 5 in KwaZulu-Natal, 4 in Limpopo, 3 in Mpumalanga, and two each in the Free State and North West.
- Antigen tests accounted for 22.1% (84,592/ 383,161) of tests reported in week 50, however the number of antigen tests is likely underestimated due to under-reporting and delayed reporting of antigen tests.
- In week 50 the public sector accounted for 72.3% of antigen tests reported. A decrease in the number of antigen tests reported was observed across all provinces in the past week, with a notable decrease in Gauteng.
- The mean turnaround time for PCR tests reported in week 50 was 1.0 days; 1.7 days in the public sector and 0.7 days in the private sector. Turnaround times for public sector PCR tests increased in the North West, Free State and KwaZulu-Natal in the past week, and were >2 days in the North West and Free State provinces.
- The mean turnaround time for antigen tests reported in week 50 was 4.3 days in the public sector and 0.1 days in the private sector.

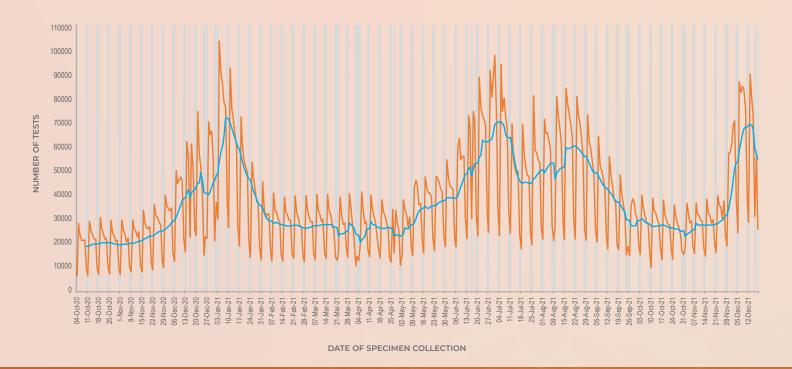


Figure 1. Number of SARS-CoV-2 tests reported by date of specimen collection, South Africa, 4 October 2020 – 18 December 2021. Blue line shows the 7-day moving average of the number of tests reported. Grey bars highlight weekend days and public holidays



Table 1. Weekly number of SARS-CoV-2 tests and positive tests reported, South Africa, 3 January – 18 December 2021

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
1	03-Jan-21	501304 (2.4)	151051	30.1
2	10-Jan-21	418056 (2.0)	104816	25.1
3	17-Jan-21	327476 (1.6)	63269	19.3
4	24-Jan-21	249595 (1.2)	34644	13.9
5	31-Jan-21	203760 (1.0)	22373	11.0
6	07-Feb-21	193321 (0.9)	16475	8.5
7	14-Feb-21	190675 (0.9)	12189	6.4
8	21-Feb-21	184706 (0.9)	10385	5.6
9	28-Feb-21	189711 (0.9)	8691	4.6
10	07-Mar-21	193441 (0.9)	8339	4.3
11	14-Mar-21	185521 (0.9)	8154	4.4
12	21-Mar-21	173266 (0.8)	7354	4.2
13	28-Mar-21	163966 (0.8)	7062	4.3
14	04-Apr-21	180869 (0.9)	7292	4.0
15	11-Apr-21	185345 (0.9)	8846	4.8
16	18-Apr-21	184898 (0.9)	9469	5.1
17	25-Apr-21	160005 (0.8)	9180	5.7
18	02-May-21	193950 (0.9)	13459	6.9
19	09-May-21	240283 (1.2)	19936	8.3
20	16-May-21	248480 (1.2)	24212	9.7
21	23-May-21	262593 (1.3)	29773	11.3
22	30-May-21	270283 (1.3)	36102	13.4
23	06-Jun-21	337795 (1.6)	59446	17.6
24	13-Jun-21	370472 (1.8)	87939	23.7
25	20-Jun-21	432130 (2.1)	118489	27.4
26	27-Jun-21	489661 (2.4)	146545	29.9
27	04-Jul-21	443559 (2.2)	141381	31.9
28	11-Jul-21	320436 (1.6)	100883	31.5
29	18-Jul-21	312753 (1.5)	88358	28.3
30	25-Jul-21	350079 (1.7)	88217	25.2
31	01-Aug-21	370787 (1.8)	87996	23.7
32	08-Aug-21	358097 (1.7)	83259	23.3
33	15-Aug-21	420113 (2.0)	95234	22.7
34	22-Aug-21	390301 (1.9)	78056	20.0
35	29-Aug-21	343603 (1.7)	54980	16.0
<u></u>	05-Sep-21	299054 (1.5)	38765	13.0
	12-Sep-21	258778 (1.3)	23977	9.3
	19-Sep-21	207298 (1.0)	13975	6.7
<u></u>	26-Sep-21	205516 (1.0)	9459	4.6
<u> </u>	03-Oct-21	195521 (1.0)	6432	3.3
<u></u>	10-Oct-21	190527 (0.9)	5009	2.6
42	17-Oct-21	184261 (0.9)	3397	
43	24-Oct-21	174266 (0.8)		
<u>+5</u> 44	31-Oct-21	174266 (0.8)	2084	1.2
45 45	07-Nov-21	179034 (0.9)		
45 46				2.5
	14-Nov-21 21-Nov-21	193960 (0.9) 218149 (1.1)	18809	
<u>47</u> 48	21-Nov-21 28-Nov-21	218149 (1.1) 371,490 (1.8)		
<u>48</u> 49	28-Nov-21 05 Doc 31	371490 (1.8) 475171 (2.3)		26.1 35.7
	05-Dec-21	475171 (2.3) 383161 (1.9)		
50	12-Dec-21	383161 (1.9)	140563	30.7

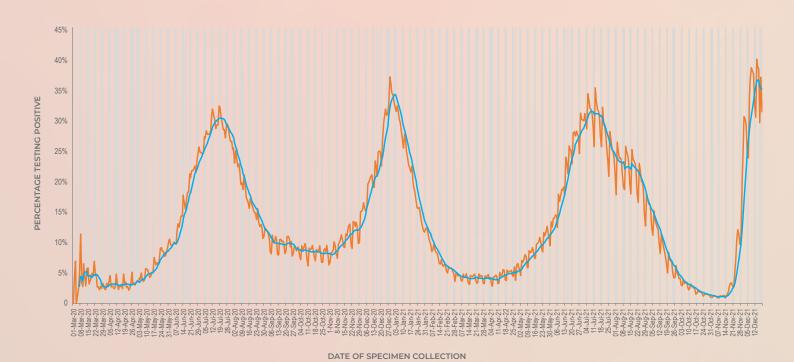


Figure 2. Percentage of tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March 2020 – 18 December 2021. Blue line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

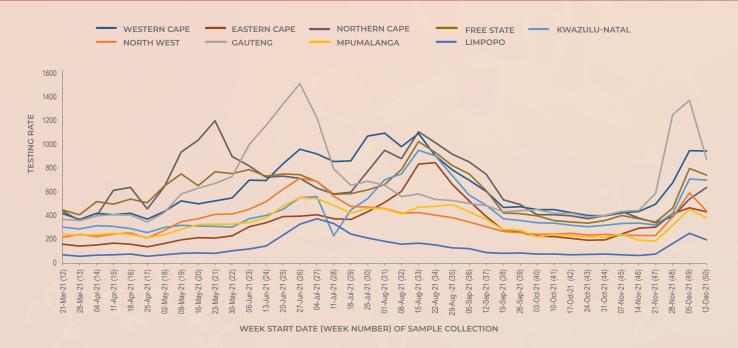


Figure 3. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 21 March 2021 – 18 December 2021

Table 2. Weekly number of tests and positive tests reported by province, South Africa, 28 November – 18 December 2021

		28 Nov	- 4 Dec 2021	5-11	Dec 2021	12-18	Dec 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	46745	6190 (13.2)	65315	18290 (28.0)	65240	25283 (38.8)	931	10.8%
Eastern Cape	6734001	27758	1600 (5.8)	30990	8339 (26.9)	28820	11691 (40.6)	428	13.7%
Northern Cape	1292786	5018	500 (10.0)	6897	1962 (28.4)	8134	3408 (41.9)	629	13.5%
Free State	2928903	13345	1915 (14.3)	22963	8612 (37.5)	21376	8855 (41.4)	730	3.9%
KwaZulu-Natal	11531628	47690	5431 (11.4)	80600	26053 (32.3)	79316	33025 (41.6)	688	9.3%
North West	4108816	15792	4353 (27.6)	23930	10828 (45.2)	17784	7140 (40.1)	433	-5.1%
Gauteng	15488137	190557	69622 (36.5)	208980	80769 (38.6)	133580	38921 (29.1)	862	-9.5%
Mpumalanga	4679786	14707	4026 (27.4)	20943	8596 (41.0)	17566	7212 (41.1)	375	0.0%
Limpopo	5852553	9588	3150 (32.9)	14496	6347 (43.8)	11326	5023 (44.3)	194	0.6%
Unknown		290	5 (1.7)	57	13 (22.8)	19	5 (26.3)		
Total	59622350	371490	96792 (26.1)	475171	169809 (35.7)	383161	140563 (36.7)	643	1.0%

a 2020 Mid-year population Statistics SA

b Current week compared to previous week



Figure 4. Weekly percentage testing positive by province, South Africa, 28 November – 18 December 2021. The horizontal blue line shows the national mean for week 50, beginning 12 December 2021

SOUTH AFRICA | WEEK 50 2021



Figure 5. Testing rates per 100,000 persons and percentage testing positive by age group and sex, South Africa, week 50, 12-18 December 2021

Table 3. Health sub-districts with the highest proportion testing positive based on public and private sector data for the week of 12 - 18 December 2021

Health district or sub-district	Province	PTP (95% CI)	Previous week
Thembelihle	Northern Cape	0.810 (0.747-0.874)	0.763 (0.645-0.881)
Letsemeng	Free State	0.783 (0.696-0.870)	0.718 (0.654-0.783)
Dipaleseng	Mpumalanga	0.666 (0.524-0.808)	0.638 (0.524-0.751)
uMlalazi	KwaZulu-Natal	0.650 (0.602-0.699)	0.368 (0.321-0.414)
Randfontein	Gauteng	0.615 (0.593-0.637)	0.661 (0.642-0.680)
Emakhazeni	Mpumalanga	0.612 (0.516-0.708)	0.562 (0.481-0.643)
Umsobomvu	Northern Cape	0.608 (0.475-0.742)	0.216 (0.107-0.325)
Tokologo	Free State	0.598 (0.456-0.741)	0.347 (0.255-0.439)
Victor Khanye	Mpumalanga	0.591 (0.459-0.722)	0.682 (0.596-0.768)
Fetakgomo	Limpopo	0.584 (0.470-0.699)	
Ikwezi	Eastern Cape	0.583 (0.448-0.719)	
Ramotshere Moiloa	North West	0.578 (0.520-0.636)	0.608 (0.558-0.659)
Siyathemba	Northern Cape	0.578 (0.440-0.715)	
Ga-Segonyana	Northern Cape	0.577 (0.475-0.680)	0.464 (0.394-0.535)
Greater Giyani	Limpopo	0.576 (0.488-0.665)	0.478 (0.396-0.559)
Mpofana	KwaZulu-Natal	0.572 (0.491-0.653)	0.391 (0.259-0.523)
Dikgatlong	Northern Cape	0.567 (0.466-0.669)	1771
Emadlangeni	KwaZulu-Natal	0.567 (0.464-0.670)	0.572 (0.457-0.688)
Thulamela	Limpopo	0.563 (0.531-0.596)	0.503 (0.467-0.539)
Siyancuma	Northern Cape	0.556 (0.482-0.629)	0.349 (0.247-0.451)
Lepele-Nkumpi	Limpopo	0.554 (0.495-0.612)	0.539 (0.482-0.596)
Ndwedwe	KwaZulu-Natal	0.548 (0.482-0.614)	0.321 (0.254-0.388)
CT Khayelitsha	Western Cape	0.548 (0.516-0.579)	0.509 (0.476-0.541)
Ditsobotla	North West	0.541 (0.458-0.623)	0.712 (0.647-0.777)
Kwa Sani	KwaZulu-Natal	0.541 (0.393-0.688)	0.114 (0.028-0.201)

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 the have current week proportions testing positive that are than, and CIs that do not overlap with, the previous week proportions and CIs.

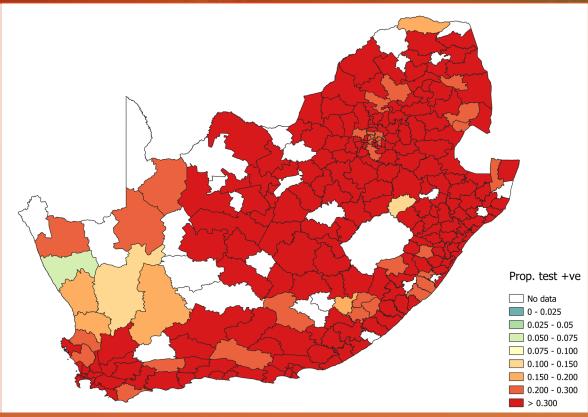


Figure 6. Proportion testing positive by health sub-district in South Africa for the week of 12-18 December 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

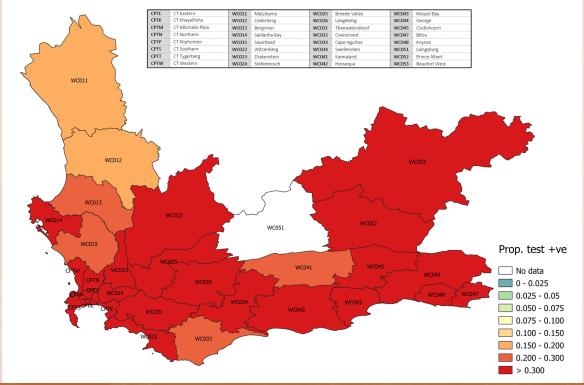


Figure 7. Proportion testing positive by health sub-district in the Western Cape Province for the week of 12-18 December 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%

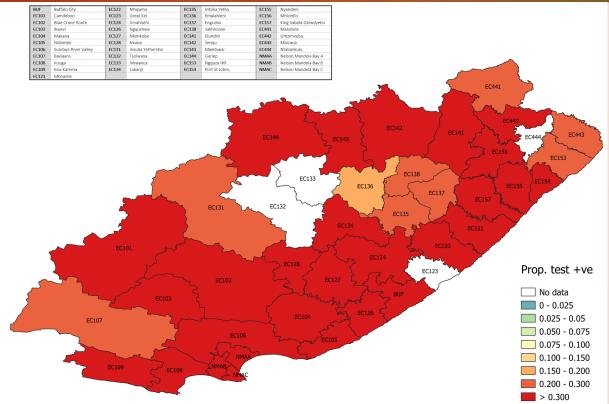


Figure 8. Proportion testing positive by health sub-district in the Eastern Cape Province for the week of 12-18 December 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

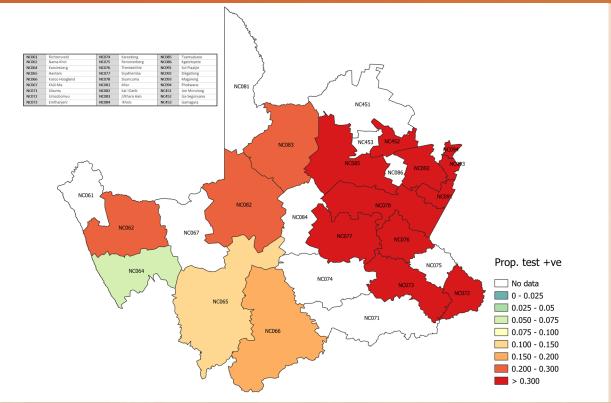


Figure 9. Proportion testing positive by health sub-district in Northern Cape Province for the week of 12-18 December 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

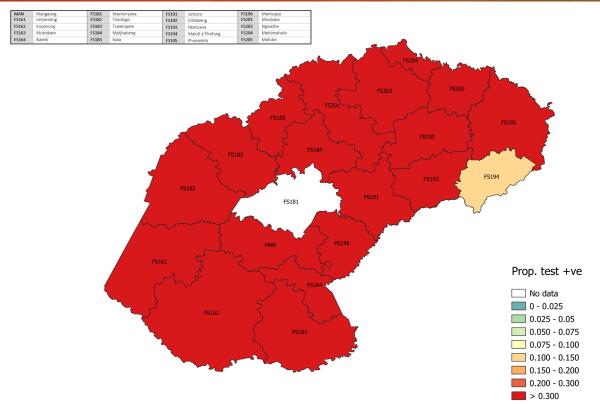


Figure 10. Proportion testing positive by health sub-district in Free State Province for the week of 12-18 December 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

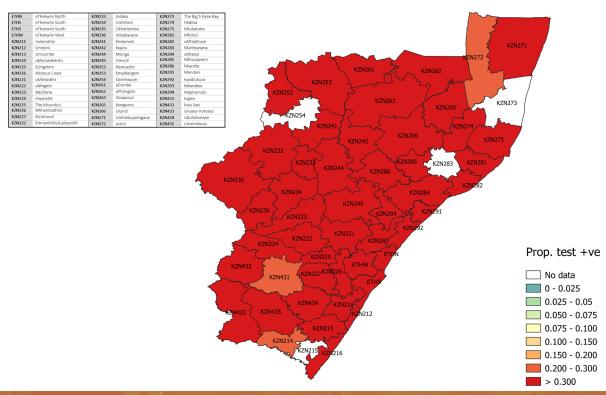


Figure 11. Proportion testing positive by health sub-district in KwaZulu-Natal Province for the week of 12-18 December 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

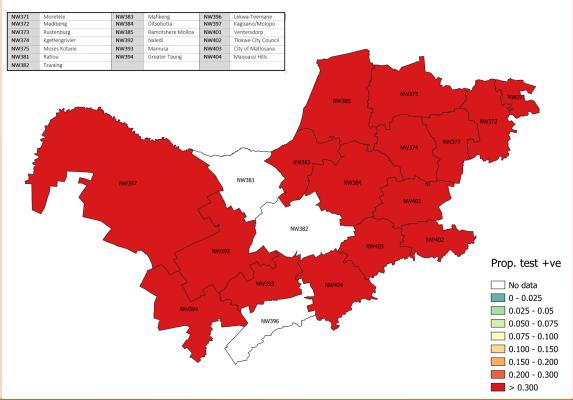


Figure 12. Proportion testing positive by health sub-district in North West Province for the week of 12-18 December 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

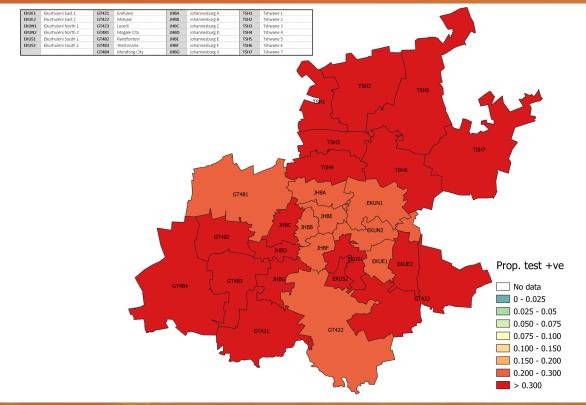


Figure 13. Proportion testing positive by health sub-district in Gauteng Province for the week of 12-18 December 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

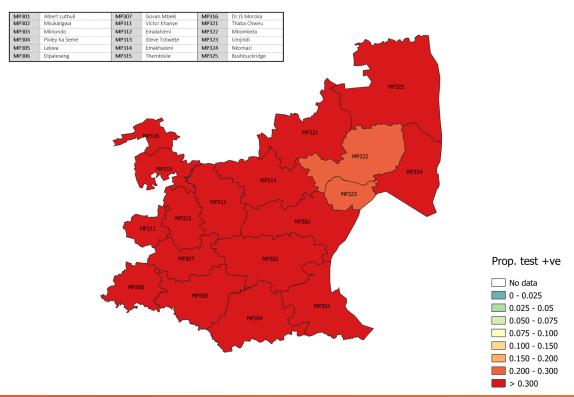


Figure 14. Proportion testing positive by health sub-district in Mpumalanga Province for the week of 12-18 December 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

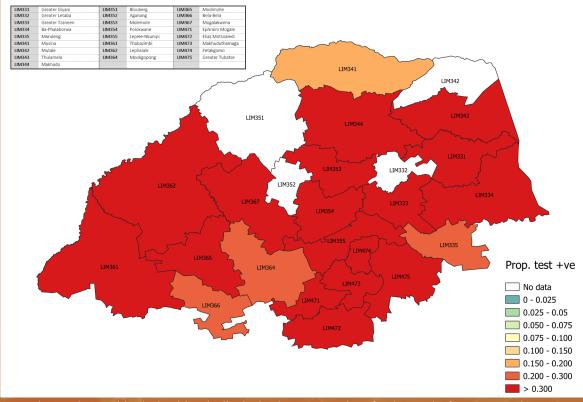


Figure 15. Proportion testing positive by health sub-district in Limpopo Province for the week of 12-18 December 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

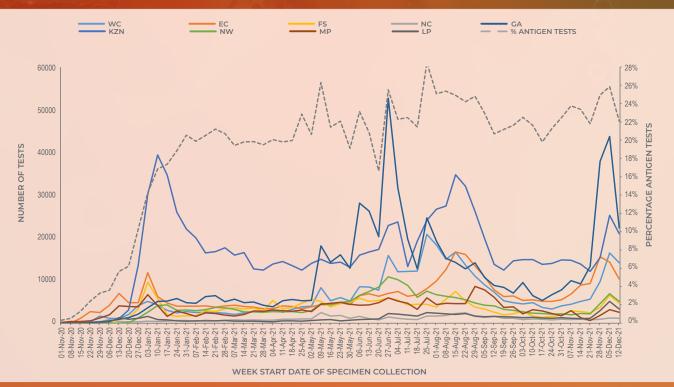


Figure 16. Number of antigen tests by province and overall percentage antigen tests, South Africa, 1 November 2020 – 18 December 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GA Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

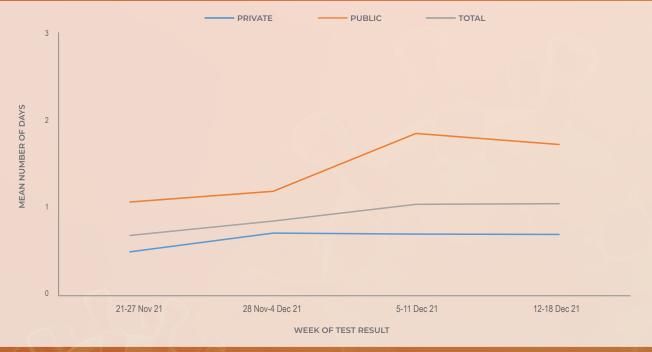


Figure 17. Mean number of days between date of specimen collection and date of test result for PCR tests by week of test result, South Africa, 21 November – 18 December 2021

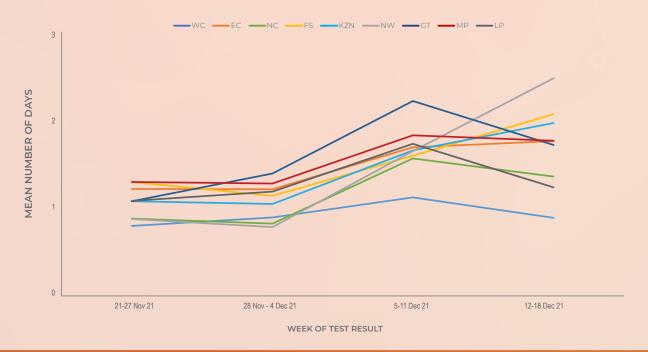


Figure 18. Mean number of days between date of specimen collection and date of test result for PCR tests in the public sector by week of test result and province, South Africa, 21 November – 18 December 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GT Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

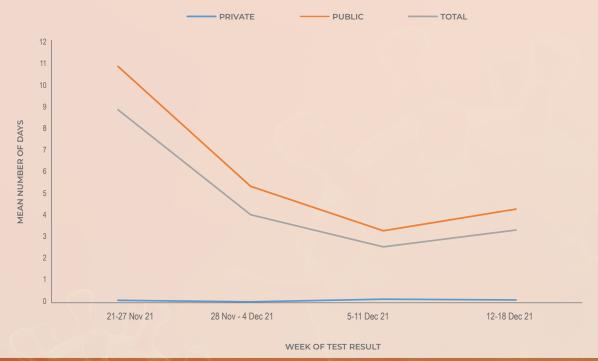


Figure 19. Mean number of days between date of specimen collection and date of test result for antigen tests by week of test result, South Africa, 21 November – 18 December 2021

SOUTH AFRICA | WEEK 50 2021

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 49 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. 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, 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 (approximately 98% of public sector facilities in the country) and private (approximately 81% of private testing facilities) 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. Districts with fewer than 20 tests reported during the week have been excluded from the analysis.

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, PCR vs. antigenbased tests or prioritisation of severe or at-risk cases during epidemic waves) 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.