SOUTH AFRICA WEEK 5 2022

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

OVERVIEW OF REPORT

This report summarises national laboratory testing for SARS-CoV-2, the virus causing COVID-19, in South Africa. This report is based on data for specimens reported up to 5 February 2022 (Week 5 of 2022).

HIGHLIGHTS

- The number of tests reported in week 5 of 2022 (n=189,702: 145,962 PCR and 43,740 antigen tests) was the lowest weekly number of tests reported since early November 2021.
- In week 5, the testing rate was highest in the Gauteng (474 per 100,000 persons) and lowest in Limpopo (105 per 100,000 persons).
- In week 5, the percentage testing positive was 11.3%, which was 1.0% lower than the previous week.
- In week 5, compared to the previous week, the percentage testing positive decreased in the Western Cape, Eastern Cape, Free State, KwaZulu-Natal and Limpopo provinces. The percentage testing positive was unchanged in Gauteng, Northern Cape, North West and Mpumalanga.
- The percentage testing positive in week 5 was highest in Limpopo (22.8%) followed by Mpumalanga (21.1%), and was <15% in all other provinces.
- The percentage testing positive was highest in the 10-14 years age group (28.7%).

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Executive Summary:

- In the period 1 March 2020 through 5 February 2022, 22,270,141 tests for SARS-CoV-2 have been reported nationally: 18,647,467 PCR and 3,622,674 antigen tests.
- The number of tests reported in week 5 of 2022 (n=189,702: 145,962 PCR and 43,740 antigen tests) was lower than the number of tests reported in the previous week and the lowest weekly number of tests reported since early November 2021.
- Gauteng reported the largest proportion of tests (39.5%), followed by KwaZulu-Natal (15.9%) and Western Cape (14.9%).
- The overall testing rate decreased slightly from the previous week (341 per 100,000 persons in week 4 to 315 per 100,000 persons in week 5).
- In week 5, a decrease in the testing rate was observed in all provinces. The testing rate was highest in Gauteng (474 per 100,000 persons) and lowest in Limpopo (105 per 100,000 persons).
- The testing rate in week 5 was highest in the ≥80 years age group (633 per 100,000 persons).
- In week 5, the percentage testing positive was 11.3%, which was 1.0% lower than the previous week (P<0.001).
- In the past week, the percentage testing positive decreased by 1.3% in the public sector (11.1% in week 4 to 9.8% in week 5, P<0.001) and by 0.9% in the private sector (13.1% in week 4 to 12.2% in week 5, P<0.001).
- In week 5, compared to the previous week, the percentage testing positive decreased in the Western Cape, Eastern Cape, Free State, KwaZulu-Natal and Limpopo provinces. The percentage testing positive was unchanged

in Gauteng, Northern Cape, North West and Mpumalanga.

- The percentage testing positive in week 5 was highest in Limpopo (22.8%) followed by Mpumalanga (21.1%). The percentage testing positive was <15% in all other provinces.
- Health sub-districts showing the highest percentage testing positive were concentrated Western Cape (n=7), Limpopo (n=7), and Mpumalanga (n=4).
- The percentage testing positive has increased in the 5-9, 10-14 and 15-19 year age groups in recent weeks, however a decrease was observed in the past week for all three age groups.
- Antigen tests accounted for 23.1% (43,740/189,702) of tests reported in week 5, however the number of antigen tests is likely underestimated due to under-reporting and delayed reporting of antigen tests.
- In week 5 the public sector accounted for 62.7% (27,411/43,740) of antigen tests reported. A decrease in the number of antigen tests reported was observed across all provinces in the past few weeks.
- The mean turnaround time for PCR tests reported in week 5 was 0.7 days; 1.0 day in the public sector and 0.6 days in the private sector. Turnaround times for public sector PCR tests increased in the Free State and Limpopo provinces in the past week, and were <2 days in all provinces except Limpopo.
- The mean turnaround time for antigen tests reported in week 5 was 6.8 days in the public sector and 0.1 days in the private sector.

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DATE OF SPECIMEN COLLECTION

Figure 1. Number of SARS-CoV-2 tests reported by date of specimen collection, South Africa, 4 October 2020 – 5 February 2022. Blue line shows the 7-day moving average of the number of tests reported. Grey bars highlight weekend days and public holidays



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 Table 1. Weekly number of SARS-CoV-2 tests and positive tests reported, South Africa, 3 January 2021 – 5 February 2022

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
1	03-Jan-21	501381 (2.3)	151071	30.1
2	10-Jan-21	418299 (1.9)	104825	25.1
3	17-Jan-21	327530 (1.5)	63282	19.3
4	24-Jan-21	249619 (1.1)	34652	13.9
5	31-Jan-21	203794 (0.9)	22380	11.0
6	07-Feb-21	193335 (0.9)	16476	8.5
7	14-Feb-21	190707 (0.9)	12191	6.4
8	21-Feb-21	184724 (0.8)	10389	5.6
9	28-Feb-21	189727 (0.9)	8695	4.6
10	07-Mar-21	193452 (0.9)	8341	4.3
11	14-Mar-21	185524 (0.8)	8156	4.4
12	21-Mar-21	173271 (0.8)	7356	4.2
13	28-Mar-21	163973 (0.7)	7063	4.3
14	04-Apr-21	180873 (0.8)	7292	4.0
15	<u>11-Apr-21</u>	185349 (0.8)	8847	4.8
16	18-Apr-21	184919 (0.8)	9471	5.1
17	25-Apr-21	160023 (0.7)	9182	5.7
18	02-May-21	193969 (0.9)	13461	6.9
19	09-May-21	240291 (1.1)	19939	8.3
20	16-May-21	248488 (1.1)	24212	9.7
21	23-May-21	262635 (1.2)	29778	11.3
22	30-May-21	270303 (1.2)		13.4
23	06-Jun-21	337902 (1.5)	59450	17.6
24	<u>13-Jun-21</u>	370981 (1.7)	88084	23.7
25	20-Jun-21	432415 (1.9)	118617	27.4
26	<u> </u>	490232 (2.2)	146623	29.9
27	<u> </u>	443823 (2.0)	141453	31.9
28	<u>11-Jul-21</u>	320627 (1.4)	100945	31.5
	<u>18-Jul-21</u>	313042 (1.4)	88435	28.3
	<u>25-Jul-21</u>	<u> </u>	88348	25.2
3	<u> </u>	<u> </u>	88122	23.7
	08-Aug-21	<u> </u>	83373	23.2
	<u>15-Aug-21</u>	420769 (1.9)	95367	22.7
<u></u>	22-Aug-21			20.0
<u></u>	29-Aug-21	<u> </u>	<u> </u>	<u> </u>
<u></u>	12 Sop 21	260557 (1.3)	24010	
	<u>12-3ep-21</u> 19-Sep-21	200333 (1.2)	14007	<u>5.z</u>
<u></u>	<u> </u>	206569 (0.9)	9486	4.6
40	<u>20 3cp 21</u>	1964.03 (0.9)	6445	
40	10-Oct-21	191411 (0.9)	5039	26
42	17-Oct-21	185022 (0.8)		
43	24-Oct-21	175977 (0.8)	2562].5
	31-Oct-21	180249 (0.8)	2100	1.2
45	07-Nov-21	193826 (0.9)	2316	1.2
46	14-Nov-21	195449 (0.9)	4806	2.5
47	21-Nov-21	223080 (1.0)	18946	8.5
48	28-Nov-21	378500 (1.7)	98263	26.0
49	05-Dec-21	488526 (2.2)	174532	35.7
50	12-Dec-21	418675 (1.9)	154042	36.8
51	19-Dec-21	333695 (1.5)	117041	35.1
52	20-Dec-21	213438 (1.0)	65474	30.7
1	02-Jan-22	259012 (1.2)	60698	23.4
2	09-Jan-22	225306 (1.0)	34872	15.5
3	16-Jan-22	201926 (0.9)	23709	11.7
4	23-Jan-22	205372 (0.9)	25320	12.3
5	30-Jan-22	189702 (0.9)	21485	11.3
	Total	22,270,141 (100.0)	3,937,537	

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DATE OF SPECIMEN COLLECTION

Figure 2. Percentage of tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March 2020 - 5 February 2022. 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 – 5 February 2022

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Table 2. Weekly number of tests and positive tests reported by province, South Africa, 16 January – 5 February 2022

		16-22	2 Jan 2022	23-29	Jan 2022	30 Jan	- 5 Feb 2022	- 21	
Province	Population ^a	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	Tests per 100,000 persons	Change in percentage positive ^b
Western Cape	7113776	33710	5033 (14.9)	29121	3817 (13.1)	28264	3382 (12.0)	397	-1.1%
Eastern Cape	6676590	13707	1457 (10.6)	12860	1144 (8.9)	11694	815 (7.0)	175	-1.9%
Northern Cape	1303047	4765	841 (17.6)	4370	624 (14.3)	3515	525 (14.9)	270	0.7%
Free State	2932441	12915	1166 (9.0)	13492	1563 (11.6)	12495	1333 (10.7)	426	-0.9%
KwaZulu-Natal	11513575	35102	3861 (11.0)	32912	3012 (9.2)	30199	2524 (8.4)	262	-0.8%
North West	4122854	10683	1526 (14.3)	12222	1890 (15.5)	10660	1576 (14.8)	259	-0.7%
Gauteng	15810388	73562	6444 (8.8)	79127	8172 (10.3)	74913	7525 (10.0)	474	-0.3%
Mpumalanga	4743584	10541	1669 (15.8)	13224	2856 (21.6)	10940	2309 (21.1)	231	-0.5%
Limpopo	5926724	6911	1710 (24.7)	8008	2235 (27.9)	6213	1417 (22.8)	105	-5.1%
Unknown		30	2 (6.7)	36	7 (19.4)	809	79 (9.8)		
Total	60142978	201926	23709 (11.7)	205372	25320 (12.3)	189702	21485 (11.3)	315	-1.0%

a 2021 Mid-year population Statistics SA

b Current week compared to previous week



Figure 4. Weekly percentage testing positive by province, South Africa, 16 January – 5 February 2022. The horizontal blue line shows the national mean for week 5, beginning 30 January 2022

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AGE GROUP (YEARS)

Figure 5. Testing rates per 100,000 persons and percentage testing positive by age group and sex, South Africa, week 5, 30 January – 5 February 2022



WEEK START DATE OF SAMPLE COLLECTION

Figure 6. Percentage testing positive by age group and week of specimen collection, South Africa, 3 October 2021 - 5 February 2022

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Table 3. Health sub-districts with the highest proportion testing positive based on public and private sector data for the week of30 January – 5 February 2022

Health district or sub-district	Province	PTP (95% CI)	Previous week
Modimolle	Limpopo	0.424 (0.318-0.531)	0.266 (0.205-0.326)
Karoo Hoogland	Northern Cape	0.391 (0.258-0.525)	0.299 (0.163-0.435)
Cape Agulhas	Western Cape	0.343 (0.211-0.475)	0.399 (0.276-0.522)
Witzenberg	Western Cape	0.319 (0.236-0.401)	0.321 (0.239-0.402)
Saldanha Bay	Western Cape	0.304 (0.266-0.342)	0.278 (0.241-0.316)
Randfontein	Gauteng	0.295 (0.267-0.323)	0.314 (0.287-0.342)
Thulamela	Limpopo	0.283 (0.248-0.319)	0.371 (0.337-0.405)
Matzikama	Western Cape	0.283 (0.224-0.342)	0.306 (0.245-0.368)
Thaba Chweu	Mpumalanga	0.280 (0.230-0.330)	0.364 (0.313-0.415)
Tshwane 5	Gauteng	0.275 (0.168-0.381)	0.180 (0.113-0.246)
Steve Tshwete	Mpumalanga		0.344 (0.322-0.366)
Greater Tzaneen	Limpopo	0.272 (0.236-0.307)	0.260 (0.229-0.291)
Mogalakwena	Limpopo	0.268 (0.216-0.319)	0.327 (0.283-0.371)
Swellendam	Western Cape	0.267 (0.172-0.362)	0.237 (0.143-0.330)
Msukaligwa	Mpumalanga	0.255 (0.225-0.286)	0.280 (0.240-0.319)
Breede Valley	Western Cape	0.247 (0.210-0.284)	0.230 (0.192-0.268)
Bushbuckridge	Mpumalanga	0.245 (0.205-0.284)	0.241 (0.205-0.277)
Lepele-Nkumpi	Limpopo	0.244 (0.167-0.321)	0.284 (0.206-0.362)
Makhuduthamaga	Limpopo	0.244 (0.134-0.355)	0.184 (0.096-0.272)
Oudtshoorn	Western Cape	0.240 (0.184-0.297)	0.140 (0.101-0.180)
Tswelopele	Free State	0.240 (0.184-0.297)	0.217 (0.170-0.265)
Makhado	Limpopo	0.238 (0.188-0.287)	0.378 (0.338-0.418)
Nama Khoi	Northern Cape	0.237 (0.189-0.285)	0.124 (0.096-0.152)
Moses Kotane	North West	0.226 (0.167-0.286)	0.165 (0.109-0.221)
uMlalazi	KwaZulu-Natal	0.219 (0.132-0.306)	0.183 (0.097-0.269)

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

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Figure 7. Proportion testing positive by health sub-district in South Africa for the week of 30 January – 5 February 2022. 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 Western Cape Province for the week of 30 January – 5 February 2022. 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%

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Figure 9. Proportion testing positive by health sub-district in the Eastern Cape Province for the week of 30 January – 5 February 2022. 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 Northern Cape Province for the week of 30 January – 5 February 2022. 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%.

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Figure 11. Proportion testing positive by health sub-district in Free State Province for the week of 30 January – 5 February 2022. 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 KwaZulu-Natal Province for the week of 30 January – 5 February 2022. 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%.

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Figure 13. Proportion testing positive by health sub-district in North West Province for the week of 30 January – 5 February 2022. 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 Gauteng Province for the week of 30 January – 5 February 2022. 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%.

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Figure 15. Proportion testing positive by health sub-district in Mpumalanga Province for the week of 30 January – 5 February 2022. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.



Figure 16. Proportion testing positive by health sub-district in Limpopo Province for the week of 30 January – 5 February 2022. 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%.

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Figure 17. Number of antigen tests by province and overall percentage antigen tests, South Africa, 1 November 2020 – 5 February 2022. 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 18. Mean number of days between date of specimen collection and date of test result for PCR tests by week of test result, South Africa, 9 January – 5 February 2022.

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Figure 19. 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, 9 January – 5 February 2022. 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 20. Mean number of days between date of specimen collection and date of test result for antigen tests by week of test result, South Africa, 9 January – 5 February 2022.

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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 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. Testing rates were calculated using mid-year population estimates from Statistics South Africa and expressed as tests per 100,000 (2019 estimates were used from week 10 - 40 of 2020, 2020 estimates were used from week 41 2021

to week 1 of 2022 and 2021 estimates were used from week 2 of 2022 and onwards). 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 94% of public sector facilities in the country) and private (approximately 83% 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.