SOUTH AFRICA WEEK 13 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 2 April 2022 (Week 13 of 2022).

HIGHLIGHTS

- The number of tests reported in week 13 of 2022 (141,687: 103,696 PCR and 37,991 antigen tests) was similar to the number of tests reported in the previous week.
- In week 13, the testing rate was highest in Gauteng (360 per 100,000 persons) and lowest in Limpopo (57 per 100,000 persons).
- In week 13, the percentage testing positive was 6.8%, which was 0.2% higher than the previous week.
- In week 13, compared to the previous week, the percentage testing positive increased in the Eastern Cape, KwaZulu-Natal, and Gauteng provinces. The percentage testing positive decreased in the North West and Limpopo and remained unchanged in the Western Cape, Northern Cape, Free State and Mpumalanga.
- The percentage testing positive in week 13 was highest in the Western Cape (11.9%) and was <10% in all other provinces.
- The percentage testing positive was highest in the 10-14 years age group (9.9%).

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Executive Summary:

- In the period 1 March 2020 through 2 April 2022, 23,681,533 tests for SARS-CoV-2 have been reported nationally: 19,627,837 PCR and 4,053,696 antigen tests.
- The number of tests reported in week 13 of 2022 (n=141,687: 103,696 PCR and 37,991 antigen tests) was similar to the number of tests reported in the previous week.
- Gauteng reported the largest proportion of tests (40.1%), followed by KwaZulu-Natal (20.8%) and Western Cape (13.1%).
- The overall testing rate was similar to the previous week (234 per 100,000 persons in week 12 to 236 per 100,000 persons in week 13).
- In week 13, testing rates were similar to the previous week in all provinces. The testing rate was highest in Gauteng (360 per 100,000 persons) and lowest in Limpopo (57 per 100,000 persons).
- The testing rate in week 13 was highest in the ≥80 years age group (403 per 100,000 persons).
- In week 13, the percentage testing positive was 6.8%, which was 0.2% higher than the previous week (6.6% in week 12 to 6.8% in week 13, P=0.011).
- In the past week, the percentage testing positive decreased by 0.2% in the public sector (5.1% in week 12 to 4.9% in week 13, P=0.041) and increased by 0.5% in the private sector (7.5% in week 12 to 8.0% week 13, P<0.001).
- In week 13, compared to the previous week, the percentage testing positive increased

in the Eastern Cape, KwaZulu-Natal, and Gauteng provinces. The percentage testing positive decreased in the North West and Limpopo and remained unchanged in the Western Cape, Northern Cape, Free State and Mpumalanga.

- The percentage testing positive in week 13 was highest in the Western Cape (11.9%) and was <10% in all other provinces.
- Health sub-districts showing the highest percentage testing positive were concentrated in the Western Cape (n=17).
- In week 13, the percentage testing positive was highest in the 10-14 years age group (9.9%).
- Antigen tests accounted for 26.8% (37,991/141,687) of tests reported in week 13, however the number of antigen tests is likely underestimated due to under-reporting and delayed reporting of antigen tests.
- In week 13 the public sector accounted for 51.3% (19,500/37,991) 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 13 was 0.7 days; 1.0 day in the public sector and 0.5 days in the private sector. Turnaround times for public sector PCR tests decreased in Limpopo and were <2 days in all provinces.
- The mean turnaround time for antigen tests reported in week 13 was 23.5 days in the public sector and 0.2 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 – 2 April 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 – 2 April 2022

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
1	03-Jan-21	501384 (2.1)	151074	30.1
2	10-Jan-21	418299 (1.8)	104825	25.1
3	17-Jan-21	327531 (1.4)	63282	19.3
4	24-Jan-21	249622 (1.1)	34652	13.9
5	31-Jan-21	203797 (0.9)	22380	11.0
6	07-Feb-21	193340 (0.8)	16476	8.5
7	14-Feb-21	190711 (0.8)	12191	6.4
8	21-Feb-21	184729 (0.8)	10390	5.6
9	28-Feb-21	189730 (0.8)	8695	4.6
10	07-Mar-21	193454 (0.8)	8341	4.3
1	14-Mar-21	185526 (0.8)	8156	4.4
12	21-Mar-21	173274 (0.7)	7356	4.2
13	28-Mar-21	163974 (0.7)	7063	4.3
14	04-Apr-21	180873 (0.8)	7292	4.0
15	11-Apr-21	185349 (0.8)	8847	4.8
16	18-Apr-21	184920 (0.8)	9471	5.1
17	25-Apr-21	160024 (0.7)	9182	5.7
18	02-May-21	193973 (0.8)	13463	6.9
19	09-May-21	240292 (1.0)	19939	8.3
20	16-May-21	248488 (1.0)	24212	9.7
21	23-May-21	262637 (1.1)	29778	11.3
22	30-May-21	270304 (1.1)	36106	13.4
23	06-Jun-21	337911 (1.4)	59453	17.6
24	13-Jun-21	370988 (1.6)	88086	23.7
25	20-Jun-21	432588 (1.8)	118653	27.4
26	27-Jun-21	490245 (2.1)	146636	29.9
27	04-Jul-21	443857 (1.9)	141461	31.9
28	11-Jul-21	320770 (1.4)	100955	31.5
29	18-Jul-21	313097 (1.3)	88443	28.2
	25-Jul-21	350485 (1.5)	88355	25.2
31	01-Aug-21	372226 (1.6)	88127	23.7
32	08-Aug-21	359519 (1.5)	83378	23.2
33	<u>15-Aug-21</u>	420875 (1.8)	95388	22.7
34	22-Aug-21	391494 (1.7)	78189	20.0
35	29-Aug-21	345233 (1.5)	55095	16.0
36	05-Sep-21	300462 (1.3)		12.9
37	12-Sep-21	260660 (1.1)	24018	9.2
38	<u>19-Sep-21</u>	209033 (0.9)	14011	6.7
	<u>26-Sep-21</u>	207755 (0.9)	9491	4.6
40	<u>03-Oct-21</u>	<u> </u>	6450	3.3
4	<u>10-Oct-21</u>	<u> </u>	5043	2.6
42	[7-Oct-2]	185545 (0.8)	3412	<u> </u>
43	<u>24-Oct-21</u>	177125 (0.7)	2566	
44	<u> </u>	<u> </u>	2104	<u> </u>
45	<u> </u>	<u> </u>	2321	<u> </u>
46	<u>14-NOV-21</u>		4810	2.4
47	21-Nov-21	224578 (0.9)	189'/4	8.4
48	<u> </u>		98387	25.8
49	<u>05-Dec-21</u>	492603 (Z.I)	175008	35.5
50	12-Dec-21	424173 (1.8)	154/89	30.5
<u> </u>	<u>19-Dec-21</u>	336929 (1.4)	117593	<u> </u>
52	20-Dec-21	216452 (0.9)	66044	30.5
	02-Jan-22	272200 (1.1)	35095	15.1
Z	<u> </u>	232370 (1.0)	33093	

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3	16-Jan-22	207234 (0.9)	23991	11.6	
4	23-Jan-22	212056 (0.9)	25757	12.1	
5	24-Jan-22	207523 (0.9)	22906	11.0	
6	06-Feb-22	200091 (0.8)	20361	10.2	
7	13-Feb-22	187001 (0.8)	19033	10.2	
8	14-Feb-22	177814 (0.8)	16255	9.1	
9	27-Feb-22	168407 (0.7)	13074	7.8	
10	06-Mar-22	151086 (0.6)	10610	7.0	
11	13-Mar-22	159024 (0.7)	9792	6.2	
12	20-Mar-22	141004 (0.6)	9276	6.6	
13	27-Mar-22	141687 (0.6)	9658	6.8	
	Total	23,681,533 (100.0)	4,051,045		

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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 – 2 April 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 – 2 April 2022

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Table 2. Weekly number of tests and positive tests reported by province, South Africa, 13 March – 2 April 2022

		13-19) Mar 2022	20-26	Mar 2022	27 Mar	- 2 Apr 2022	- 121	
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	22279	2594 (11.6)	19694	2471 (12.5)	18520	2203 (11.9)	260	-0.7%
Eastern Cape	6676590	9223	328 (3.6)	8318	409 (4.9)	8195	470 (5.7)	123	0.8%
Northern Cape	1303047	3124	158 (5.1)	2698	126 (4.7)	2736	125 (4.6)	210	-0.1%
Free State	2932441	8738	330 (3.8)	7630	288 (3.8)	8436	304 (3.6)	288	-0.2%
KwaZulu-Natal	11513575	30379	1650 (5.4)	30643	1786 (5.8)	29513	2011 (6.8)	256	1.0%
North West	4122854	7398	366 (4.9)	6110	342 (5.6)	6123	235 (3.8)	149	-1.8%
Gauteng	15810388	64793	3770 (5.8)	54969	3399 (6.2)	56860	3861 (6.8)	360	0.6%
Mpumalanga	4743584	7776	367 (4.7)	6533	266 (4.1)	6470	276 (4.3)	136	0.2%
Limpopo	5926724	4000	167 (4.2)	3065	125 (4.1)	3360	83 (2.5)	57	-1.6%
Unknown		1314	62 (4.7)	1344	64 (4.8)	1474	90 (6.1)		
Total	60142978	159024	9792 (6.2)	141004	9276 (6.6)	141687	9658 (6.8)	236	0.2%

a 2021 Mid-year population Statistics SA

b Current week compared to previous wee



Figure 4. Weekly percentage testing positive by province, South Africa, 13 March – 2 April 2022. The horizontal blue line shows the national mean for week 13, beginning 27 March 2022

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Figure 5. Testing rates per 100,000 persons and percentage testing positive by age group and sex, South Africa, week 13, 27 March – 2 April 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 – 2 April 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 of 27 March – 2 April 2022

Health district or sub-district	Province	PTP (95% CI)	Previous week
Randfontein	Gauteng	0.316 (0.277-0.356)	0.366 (0.326-0.406)
Swellendam	Western Cape	0.251 (0.156-0.347)	0.211 (0.105-0.318)
Swartland	Western Cape	0.221 (0.076-0.366)	an a
Tshwane 5	Gauteng	0.200 (0.089-0.312)	0.207 (0.102-0.312)
Saldanha Bay	Western Cape	0.196 (0.147-0.246)	0.186 (0.142-0.231)
CT Northern	Western Cape	0.194 (0.172-0.215)	0.212 (0.190-0.233)
Bitou	Western Cape	0.186 (0.117-0.255)	0.144 (0.071-0.217)
Midvaal	Gauteng	0.174 (0.063-0.284)	0.035 (0.000-0.103)
Langeberg	Western Cape	0.173 (0.064-0.282)	0.093 (0.015-0.170)
Overstrand	Western Cape	0.157 (0.117-0.197)	0.131 (0.095-0.167)
Drakenstein	Western Cape	0.151 (0.121-0.181)	0.157 (0.131-0.184)
Cape Agulhas	Western Cape	0.151 (0.047-0.255)	
Phumelela	Free State	0.150 (0.038-0.262)	0.037 (0.000-0.108)
CT Tygerberg	Western Cape	0.150 (0.134-0.165)	0.140 (0.126-0.154)
CT Eastern	Western Cape	0.148 (0.126-0.171)	0.160 (0.138-0.182)
Breede Valley	Western Cape	0.144 (0.097-0.191)	0.104 (0.069-0.139)
Newcastle	KwaZulu-Natal	0.143 (0.116-0.171)	0.144 (0.119-0.168)
Hantam	Northern Cape	0.140 (0.012-0.268)	
Stellenbosch	Western Cape	0.139 (0.104-0.174)	0.093 (0.070-0.116)
CT Western	Western Cape	0.139 (0.128-0.150)	0.149 (0.137-0.160)
eThekwini North	KwaZulu-Natal	0.131 (0.119-0.143)	0.112 (0.101-0.123)
Matzikama	Western Cape	0.131 (0.064-0.197)	0.144 (0.080-0.207)
Metsimaholo	Free State	0.116 (0.057-0.176)	0.177 (0.111-0.243)
Mossel Bay	Western Cape	0.114 (0.083-0.145)	0.125 (0.092-0.159)
CT Mitchells Plain	Western Cape	0.111 (0.077-0.144)	0.127 (0.093-0.161)

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 27 March – 2 April 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 27 March – 2 April 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 27 March – 2 April 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 27 March – 2 April 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 27 March – 2 April 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 27 March – 2 April 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 27 March – 2 April 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 27 March – 2 April 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 27 March – 2 April 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 27 March – 2 April 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 – 2 April 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, 6 March – 2 April 2022.

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WEEK OF TEST RESULT

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, 6 March – 2 April 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

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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 99% of public sector facilities in the country) and private (approximately 75% 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.