SOUTH AFRICA WEEK 4 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 29 January 2022 (Week 4 of 2022).

# HIGHLIGHTS

- The number of tests reported in week 4 of 2022 (n=195,368: 150,898 PCR and 44,470 antigen tests) was slightly lower than the number of tests reported in the previous week.
- In week 4, the testing rate was highest in the Gauteng (485 per 100,000 persons) and lowest in Limpopo (121 per 100,000 persons).
- In week 4, the percentage testing positive was 12.4%, which was 0.6% higher than the previous week.
- In week 4, compared to the previous week, the percentage testing positive decreased in the Western Cape, Northern Cape, Eastern Cape and KwaZulu-Natal provinces. The percentage testing positive increased in Gauteng, Free State, Mpumalanga and Limpopo, and was unchanged in the North West province.
- The percentage testing positive in week 4 was highest in Limpopo (27.8%), followed by Mpumalanga (23.2%) and the North West (15.1%). The percentage testing positive was <15% in all other provinces.
- The percentage testing positive was highest in the 10-14 years age group (31.4%).

#### SOUTH AFRICA WEEK 4 2022

#### **Executive Summary:**

- In the period 1 March 2020 through 29 January 2022, 22,062,661 tests for SARS-CoV-2 have been reported nationally: 18,498,690 PCR and 3,563,971 antigen tests.
- The number of tests reported in week 4 of 2022 (n=195,368: 150,898 PCR and 44,470 antigen tests) was slightly lower than the number of tests reported in the previous week.
- Gauteng reported the largest proportion of tests (39.3%), followed by KwaZulu-Natal (16.1%) and Western Cape (14.3%).
- The overall testing rate decreased slightly from the previous week (334 per 100,000 persons in week 3 to 325 per 100,000 persons in week 4).
- In week 4, a slight increase in the testing rate was observed in the North West, Gauteng, Mpumalanga and Limpopo provinces and a decrease was observed in all other provinces. The testing rate was highest in Gauteng (485 per 100,000 persons) and lowest in Limpopo (121 per 100,000 persons).
- The testing rate in week 4 was highest in the ≥80 years age group (708 per 100,000 persons).
- In week 4, the percentage testing positive was 12.4%, which was 0.6% higher than the previous week (P<0.001).</li>
- In the past week, the percentage testing positive decreased by 1.0% in the public sector (12.0% in week 3 to 11.0% in week 4, P<0.001) and increased by 1.6% in the private sector (11.6% in week 3 to 13.2% in week 4, P<0.001).</li>
- In week 4, compared to the previous week, the percentage testing positive decreased in the Western Cape, Northern Cape, Eastern

Cape and KwaZulu-Natal provinces. The percentage testing positive increased in Gauteng, Free State, Mpumalanga and Limpopo, and was unchanged in the North West province.

- The percentage testing positive in week 4 was highest in Limpopo (27.8%) followed by Mpumalanga (23.2%) and the North West (15.1%). The percentage testing positive was <15% in all other provinces.</li>
- Health sub-districts showing the highest percentage testing positive were concentrated in the Western Cape (n=8), Limpopo (n=8), Mpumalanga (n=4) and Northern Cape (n=3).
- The percentage testing positive has increased in the 5-9, 10-14 and 15-19 year age groups in recent weeks.
- Antigen tests accounted for 22.8% (44,470/195,368) of tests reported in week 4, however the number of antigen tests is likely underestimated due to under-reporting and delayed reporting of antigen tests.
- In week 4 the public sector accounted for 67.1% (29,425/44,470) 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 4 was 0.8 days; 0.8 days in the public sector and 0.8 days in the private sector. Turnaround times for public sector PCR tests decreased in the Northern Cape, Mpumalanga and Limpopo provinces in the past week, and were <2 days in all provinces.</li>
- The mean turnaround time for antigen tests reported in week 4 was 10.1 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 – 29 January 2022. Blue line shows the 7-day moving average of the number of tests reported. Grey bars highlight weekend days and public holidays

### SOUTH AFRICA WEEK 4 2022

 Table 1. Weekly number of SARS-CoV-2 tests and positive tests reported, South Africa, 3 January 2021 – 29 January 2022

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
	03-1ap-21	501381 (2 3)	151071	301
	<u> </u>	<u></u>	10/,825	251
	10-Jai 1-21		10 <del>4</del> 623	10.7
	24 Jap 21	<u>327330 (1.3)</u>	3/652	
<del>4</del>	Z4-Jali-Z1		2220	
<u>_</u>	<u> </u>	203791 (0.9)	22380	
<u> </u>		193335 (0.9)		8.5
		190707 (0.9)	12191	<u> </u>
8		<u> </u>	10389	5.6
9	28-Fep-21	189725 (0.9)	8695	4.6
	<u>0'/-Mar-21</u>	<u> </u>	8340	4.3
	<u>14-Mar-21</u>	185524 (0.8)	8156	4.4
<u> </u>	<u>21-Mar-21</u>	<u> </u>	7356	4.2
13	28-Mar-21	163973 (0.7)	7063	4.3
14	04-Apr-21	180873 (0.8)	7292	4.0
15	11-Apr-21	185348 (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	193968 (0.9)	13461	6.9
19	09-May-21	240289 (1.1)	19938	8.3
20	16-May-21	248488 (1.1)	24212	9.7
21	23-May-21	262632 (1.2)	29778	11.3
22	30-May-21	270299 (1.2)	36103	13.4
23	06-Jun-21	337901 (1.5)	59450	17.6
24	13-Jun-21	370979 (1.7)	88084	23.7
25	20-Jun-21	432412 (2.0)	118617	27.4
26	27-Jun-21	490229 (2.2)	146621	29.9
27	04-Jul-21	443820 (2.0)	141453	31.9
28	11-Jul-21	320601 (1.5)	100943	31.5
29	18-Jul-21	313033 (1.4)	88431	28.2
	25-Jul-21	350459 (1.6)	88343	25.2
31	01-Aug-21	371245 (1.7)	88114	23.7
32	08-Aug-21	358847 (16)	83368	232
33	15-Aug-21	420747 (19)	95360	20.2
34	22-Aug-21	391344 (1.8)	78161	20.0
	2 <u>2 / (ug 21</u> 29-Aug-21	345100 (1.6)	55057	16.0
36	<u>257,8921</u>	<u> </u>	38829	12.9
	<u> </u>	<u> </u>	24009	92
	<u>12-3ep-21</u>	200340 (1.2)	24009	<u>9.z</u>
	<u> </u>	200934 (0.9)	0/9/	0.7
	20-Sep-21	206547 (0.9)		4.0 7.7
40	<u> </u>	196393 (0.9)	<u> </u>	<u> </u>
4	10-Oct-21	191374 (0.9)	5019	2.6
42	17-Oct-21	184991 (0.8)	3408	1.8
43	24-Oct-21	175962 (0.8)	2561	1.5
44	31-Oct-21		2095	<u> </u>
45	07-Nov-21	193786 (0.9)	2313	<u> </u>
46	14-Nov-21	195435 (0.9)	4805	2.5
47	21-Nov-21	222942 (1.0)	18943	8.5
48	28-Nov-21	378200 (1.7)	98204	26.0
49	05-Dec-21	488301 (2.2)	174441	35.7
50	12-Dec-21	418096 (1.9)	153900	36.8
51	19-Dec-21	333174 (1.5)	116877	35.1
52	20-Dec-21	213285 (1.0)	65443	30.7
	02-Jan-22	256302 (1.2)	60592	23.6
2	09-Jan-22	223927 (1.0)	34776	15.5
3	16-Jan-22	200622 (0.9)	23605	11.8
4	23-Jan-22	195368 (0.9)	24166	12.4
	Total	22.062.661 (100.0)	3.914.018	

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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 - 29 January 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 – 29 January 2022

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Table 2. Weekly number of tests and positive tests reported by province, South Africa, 9-29 January 2022

		9-15	Jan 2022	16-22	Jan 2022	23-29	Jan 2022	$-\mathcal{Q}($	
Province	<b>Population</b> <sup>a</sup>	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 <sup>b</sup>
Western Cape	7113776	37883	8701 (23.0)	33526	5016 (15.0)	27858	3710 (13.3)	392	-1.6%
Eastern Cape	6676590	16840	3002 (17.8)	13438	1451 (10.8)	12213	1102 (9.0)	183	-1.8%
Northern Cape	1303047	6692	1526 (22.8)	4651	832 (17.9)	4083	596 (14.6)	313	-3.3%
Free State	2932441	13472	1623 (12.0)	12891	1161 (9.0)	12584	1468 (11.7)	429	2.7%
KwaZulu-Natal	11513575	40562	6771 (16.7)	34904	3845 (11.0)	31392	2875 (9.2)	273	-1.9%
North West	4122854	11131	1545 (13.9)	10547	1521 (14.4)	11525	1741 (15.1)	280	0.7%
Gauteng	15810388	79141	8638 (10.9)	73447	6435 (8.8)	76748	7941 (10.3)	485	1.6%
Mpumalanga	4743584	11849	1693 (14.3)	10427	1665 (16.0)	11749	2730 (23.2)	248	7.3%
Limpopo	5926724	6326	1275 (20.2)	6761	1677 (24.8)	7185	1997 (27.8)	121	3.0%
Unknown	이 가슴 성면, 날	31	2 (6.5)	30	2 (6.7)	31	6 (19.4)		
Total	60142978	223927	34776 (15.5)	200622	23605 (11.8)	195368	24166 (12.4)	325	0.6%

a 2021 Mid-year population Statistics SA

b Current week compared to previous week



Figure 4. Weekly percentage testing positive by province, South Africa, 9-29 January 2022. The horizontal blue line shows the national mean for week 4, beginning 23 January 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 4, 23-29



WEEK START DATE OF SAMPLE COLLECTION

Figure 6. Percentage testing positive by age group and week of specimen collection, South Africa, 4 April 2021 - 29 January

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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 of23-29 January 2022

Health district or sub-district	Province	PTP (95% CI)	Previous week
Makhado	Limpopo	0.385 (0.343-0.427)	0.394 (0.348-0.440)
Cape Agulhas	Western Cape	0.384 (0.255-0.514)	0.506 (0.395-0.618)
Thaba Chweu	Mpumalanga	0.377 (0.325-0.429)	0.230 (0.179-0.280)
Thulamela	Limpopo	0.377 (0.341-0.413)	0.382 (0.342-0.422)
Maruleng	Limpopo	0.345 (0.277-0.413)	0.192 (0.140-0.244)
Steve Tshwete	Mpumalanga	0.343 (0.321-0.366)	0.201 (0.178-0.224)
Hantam	Northern Cape	0.339 (0.240-0.438)	0.523 (0.431-0.615)
Mogalakwena	Limpopo	0.327 (0.281-0.373)	0.245 (0.198-0.291)
Matzikama	Western Cape	0.310 (0.248-0.373)	0.415 (0.350-0.481)
Witzenberg	Western Cape	0.304 (0.222-0.385)	0.381 (0.300-0.463)
Greater Giyani	Limpopo	0.294 (0.204-0.384)	0.282 (0.184-0.379)
Karoo Hoogland	Northern Cape	0.290 (0.154-0.426)	0.386 (0.269-0.504)
Randfontein	Gauteng	0.286 (0.258-0.314)	0.298 (0.266-0.330)
Msukaligwa	Mpumalanga	0.284 (0.242-0.326)	0.150 (0.118-0.182)
Lepele-Nkumpi	Limpopo	0.283 (0.205-0.362)	0.144 (0.071-0.218)
Saldanha Bay	Western Cape	0.278 (0.241-0.315)	0.294 (0.256-0.332)
Langeberg	Western Cape	0.277 (0.164-0.389)	0.313 (0.222-0.405)
Nqutu	KwaZulu-Natal	0.273 (0.215-0.330)	0.340 (0.283-0.397)
Greater Tzaneen	Limpopo	0.261 (0.229-0.292)	0.275 (0.242-0.308)
Bitou	Western Cape	0.259 (0.198-0.319)	0.158 (0.106-0.209)
Modimolle	Limpopo	0.255 (0.194-0.317)	0.310 (0.244-0.377)
Govan Mbeki	Mpumalanga	0.241 (0.214-0.268)	0.176 (0.149-0.203)
Swartland	Western Cape	0.238 (0.172-0.304)	0.353 (0.263-0.442)
Kamiesberg	Northern Cape	0.232 (0.160-0.305)	0.353 (0.268-0.438)
Breede Valley	Western Cape	0.231 (0.193-0.270)	0.250 (0.213-0.287)

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 **boxer** 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 23-29 January 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 23-29 January 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 23-29 January 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 23-29 January 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 23-29 January 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 23-29 January 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 23-29 January 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 23-29 January 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 23-29 January 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 23-29 January 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 – 29 January 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, 2 – 29 January 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, 2 – 29 January 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, 2-29 January 2022.

\* Excludes one lab in the private sector for week 1 (2-8 Jan 2022)

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#### Methods

TTesting 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 98% of public sector facilities in the country) and private (approximately 85% 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.