COVID-19 Weekly Testing Summary

Week 19 of 2022

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 14 May 2022 (Week 19 of 2022).

Highlights:

- The number of tests reported in week 19 of 2022 (177,766: 117,538 PCR and 60,228 antigen tests) was similar to the number of tests reported in the previous week.
- In week 19, the testing rate was 296 per 100,000 persons; highest in Gauteng (477 per 100,000 persons) and lowest in Limpopo (45 per 100,000 persons).
- In week 19, the percentage testing positive was 25.3%, which was 1.1% lower than the previous week.
- In week 19, compared to the previous week, the percentage testing was unchanged in Limpopo, decreased in KwaZulu-Natal and Gauteng, and increased in all other provinces.
- The percentage testing positive in week 19 was highest in the Western Cape (33.4%), and was between 20-30% in Gauteng, Northern Cape, Eastern Cape, Free State, KwaZulu-Natal and North West provinces. The percentage testing positive was between 15-19% in Mpumalanga and Limpopo.
- In week 19, the percentage testing positive was highest in the 10-14 years age group (31.3%) followed by the ≥80 years age group (30.2%).

Executive Summary:

- In the period 1 March 2020 through 14 May 2022, 24,630,968 tests for SARS-CoV-2 have been reported nationally: 20,230,530 PCR and 4,400,438 antigen tests.
- The number of tests reported in week 19 of 2022 (n= 177,766: 117,538 PCR and 60,228 antigen tests) was similar to the number of tests reported in the previous week.
- Gauteng reported the largest proportion of tests (42.5%), followed by KwaZulu-Natal (21.0%) and Western Cape (13.0%).
- The overall testing rate was similar to the previous week (297 per 100,000 persons in week 18 to 296 per 100,000 persons in week 19).
- In week 19, testing rates increased slightly in the Northern Cape, and were similar to the previous week in all other provinces. The testing rate was highest in Gauteng (477 per 100,000 persons) and lowest in Limpopo (45 per 100,000 persons).
- The testing rate in week 19 was highest in the ≥80 years age group (568 per 100,000 persons).
- In week 19, the percentage testing positive was 25.3%, which was 1.1% lower than the previous week (26.4% in week 18 to 25.3% in week 19, P<0.001).

- In the past week, the percentage testing positive remained unchanged in the public sector (19.4% for both weeks 18 and 19, P=0.846) and decreased by 1.9% in the private sector (30.7% in week 18 to 28.8% in week 19, P<0.001).
- In week 19, compared to the previous week, the percentage testing positive was unchanged in Limpopo, decreased in KwaZulu-Natal and Gauteng, and increased in all other provinces.
- The percentage testing positive in week 19 was highest in the Western Cape (33.4%), and was between 20-30% in Gauteng, Northern Cape, Eastern Cape, Free State, KwaZulu-Natal and North West provinces. The percentage testing positive was between 15-19% in Mpumalanga and Limpopo.
- In week 19, health sub-districts showing the highest percentage testing positive were concentrated in the Western Cape (n=19).
- In week 19, the percentage testing positive was highest in the 10-14 years age group (31.3%) followed by the ≥80 years age group (30.2%). A decrease was observed across all age groups except in the 0-4 years age group.
- Antigen tests accounted for 33.9% (60,228/177,766) of tests reported in week 19, however the number of antigen tests is likely underestimated due to under-reporting and delayed reporting of antigen tests.
- In week 19 the public sector accounted for 47.3% (28,516/60,228) of antigen tests reported and the number of antigen tests reported was similar to the previous week in all provinces.
- The mean turnaround time for PCR tests reported in week 19 was 0.9 days; 1.3 days in the public sector and 0.6 days in the private sector. Turnaround times for public sector PCR tests decreased in Mpumalanga, North West and Free State provinces and were <2 days in all provinces.
- The mean turnaround time for antigen tests reported in week 19 was 9.7 days in the public sector and 0.1 days in the private sector.





Date of specimen collection

Figure 1. Number of SARS-CoV-2 tests reported by date of specimen collection, South Africa, 4 October 2020 – 14 May 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- 14 May 2022

		No. of tests			
Week	Week		No. of positive	Percentage testing	
number	beginning	n (%)	tests	positive (%)	
1	03-Jan-21	501386 (2.0)	151074	30.1	
2	10-Jan-21	418299 (1.7)	104825	25.1	
3	17-Jan-21	327534 (1.3)	63283	19.3	
4	24-Jan-21	249623 (1.0)	34652	13.9	
5	31-Jan-21	203797 (0.8)	22380	11.0	
6	07-Feb-21	193340 (0.8)	16476	8.5	
7	14-Feb-21	190714 (0.8)	12192	6.4	
8	21-Feb-21	184731 (0.7)	10390	5.6	
9	28-Feb-21	189730 (0.8)	8695	4.6	
10	07-Mar-21	193454 (0.8)	8341	4.3	
11	14-Mar-21	185527 (0.8)	8156	4.4	
12	21-Mar-21	173275 (0.7)	7356	4.2	
13	28-Mar-21	163975 (0.7)	7063	4.3	
14	04-Apr-21	180875 (0.7)	7292	4.0	
15	11-Apr-21	185350 (0.8)	8847	4.8	
16	18-Apr-21	184922 (0.8)	9471	5.1	
17	25-Apr-21	160025 (0.6)	9183	5.7	
18	02-May-21	193976 (0.8)	13464	6.9	
19	09-May-21	240329 (1.0)	19939	8.3	
20	16-May-21	248497 (1.0)	24212	9.7	
21	23-May-21	262638 (1.1)	29778	11.3	
22	30-May-21	270309 (1.1)	36106	13.4	
23	06-Jun-21	337915 (1.4)	59453	17.6	
24	13-Jun-21	370989 (1.5)	88086	23.7	
25	20-Jun-21	432622 (1.8)	118654	27.4	
26	27-Jun-21	490248 (2.0)	146638	29.9	
27	04-Jul-21	444061 (1.8)	141464	31.9	
28	11-Jul-21	320773 (1.3)	100958	31.5	
29	18-Jul-21	313232 (1.3)	88447	28.2	
30	25-Jul-21	350616 (1.4)	88359	25.2	
31	01-Aug-21	372293 (1.5)	88130	23.7	
32	08-Aug-21	359577 (1.5)	83381	23.2	
33	15-Aug-21	420888 (1.7)	95389	22.7	
34	22-Aug-21	392614 (1.6)	78198	19.9	
35	29-Aug-21	346103 (1.4)	55095	15.9	
36	05-Sep-21	300485 (1.2)	38857	12.9	
37	12-Sep-21	260672 (1.1)	24018	9.2	

38	19-Sep-21	209087 (0.8)	14011	6.7
39	26-Sep-21	207811 (0.8)	9491	4.6
40	03-Oct-21	197887 (0.8)	6452	3.3
41	10-Oct-21	191734 (0.8)	5044	2.6
42	17-Oct-21	185606 (0.8)	3412	1.8
43	24-Oct-21	177184 (0.7)	2566	1.4
44	31-Oct-21	182881 (0.7)	2106	1.2
45	07-Nov-21	196644 (0.8)	2322	1.2
46	14-Nov-21	197165 (0.8)	4812	2.4
47	21-Nov-21	224581 (0.9)	18974	8.4
48	28-Nov-21	381910 (1.6)	98393	25.8
49	05-Dec-21	493127 (2.0)	175067	35.5
50	12-Dec-21	424472 (1.7)	154906	36.5
51	19-Dec-21	337023 (1.4)	117638	34.9
52	20-Dec-21	216534 (0.9)	66083	30.5
1	02-Jan-22	272499 (1.1)	61111	22.4
2	09-Jan-22	234359 (1.0)	35132	15.0
3	16-Jan-22	208376 (0.8)	24049	11.5
4	23-Jan-22	212491 (0.9)	25803	12.1
5	24-Jan-22	210060 (0.9)	22943	10.9
6	06-Feb-22	203073 (0.8)	20407	10.0
7	13-Feb-22	191121 (0.8)	19085	10.0
8	14-Feb-22	180681 (0.7)	16302	9.0
9	27-Feb-22	172488 (0.7)	13132	7.6
10	06-Mar-22	155256 (0.6)	10677	6.9
11	13-Mar-22	163453 (0.7)	9862	6.0
12	20-Mar-22	145819 (0.6)	9448	6.5
13	27-Mar-22	155534 (0.6)	10237	6.6
14	03-Apr-22	136460 (0.6)	10567	7.7
15	10-Apr-22	117509 (0.5)	12252	10.4
16	17-Apr-22	135054 (0.5)	24037	17.8
17	24-Apr-22	152303 (0.6)	33634	22.1
18	01-May-22	178559 (0.7)	47178	26.4
19	08-May-22	177766 (0.7)	44975	25.3
	Total	24,630,968 (100.0)	4,225,355	



Percentage testing positive



Date of specimen collection

Figure 2. Percentage of tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March 2020 – 14 May 2022. Blue line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

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Week start date (week number) of sample collection



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		24-3	30 Apr 2022	1-7	7 May 2022		8-14 May 20	22	Change in percentage positive
Province	Population ^a	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	Testing rate per 100000	from previous week ^b
Western Cape	7113776	21427	4211 (19.7)	21820	6658 (30.5)	23067	7702 (33.4)	324	2.9%
Eastern Cape	6676590	8519	1409 (16.5)	10978	2709 (24.7)	11290	2919 (25.9)	169	1.2%
Northern Cape	1303047	2492	453 (18.2)	3262	797 (24.4)	3579	1045 (29.2)	275	4.8%
Free State	2932441	8222	1328 (16.2)	9928	2326 (23.4)	9570	2464 (25.7)	326	2.3%
KwaZulu-Natal	11513575	31155	8335 (26.8)	38954	11690 (30.0)	37338	9225 (24.7)	324	-5.3%
North West	4122854	5633	789 (14.0)	6462	1234 (19.1)	6849	1439 (21.0)	166	1.9%
Gauteng	15810388	64745	15795 (24.4)	76485	19956 (26.1)	75491	18225 (24.1)	477	-1.9%
Mpumalanga	4743584	6752	778 (11.5)	6949	1137 (16.4)	6912	1298 (18.8)	146	2.4%
Limpopo	5926724	2361	368 (15.6)	2619	430 (16.4)	2648	438 (16.5)	45	0.1%
Unknown		997	168 (16.9)	1102	241 (21.9)	1022	220 (21.5)		
Total	60142978	152303	33634 (22.1)	178559	47178 (26.4)	177766	44975 (25.3)	296	-1.1%

Table 2. Weekly number of tests and positive tests reported by province, South Africa, 24 April – 14 May 2022

^a 2021 Mid-year population Statistics SA

^bCurrent week compared to previous week



Province

Figure 4. Weekly percentage testing positive by province, South Africa, 24 April – 14 May 2022. The horizontal blue line shows the national mean for week 19, beginning 8 May 2022



Age group (years)





Week start date (week number) of sample collection



Table 3. Health sub-districts with the highest proportion testing positive based on public and privatesector data for the week of 8-14 May 2022

Health district or sub-district	Province	PTP (95% CI)	Previous week
Hessequa	Western Cape	0.838 (0.694-0.983)	
Randfontein	Gauteng	0.658 (0.632-0.684)	0.673 (0.650-0.696)
Witzenberg	Western Cape	0.618 (0.506-0.729)	0.257 (0.140-0.373)
Cape Agulhas	Western Cape	0.608 (0.489-0.727)	0.368 (0.231-0.505)
Mohokare	Free State	0.537 (0.411-0.663)	0.232 (0.098-0.366)
Saldanha Bay	Western Cape	0.522 (0.477-0.568)	0.448 (0.400-0.495)
Swartland	Western Cape	0.521 (0.413-0.629)	0.193 (0.086-0.300)
Oudtshoorn	Western Cape	0.501 (0.431-0.571)	0.406 (0.347-0.466)
Swellendam	Western Cape	0.501 (0.421-0.581)	0.347 (0.253-0.441)
Inxuba Yethemba	Eastern Cape	0.436 (0.364-0.508)	0.382 (0.289-0.475)
Phokwane	Northern Cape	0.422 (0.280-0.564)	
Drakenstein	Western Cape	0.421 (0.387-0.455)	0.434 (0.396-0.472)
Prince Albert	Western Cape	0.415 (0.297-0.534)	
CT Northern	Western Cape	0.403 (0.380-0.427)	0.394 (0.370-0.418)
Theewaterskloof	Western Cape	0.402 (0.317-0.487)	0.365 (0.263-0.467)
Stellenbosch	Western Cape	0.394 (0.347-0.441)	0.332 (0.287-0.378)
Bitou	Western Cape	0.389 (0.302-0.476)	0.384 (0.286-0.482)
CT Eastern	Western Cape	0.378 (0.351-0.406)	0.370 (0.344-0.397)
Emthanjeni	Northern Cape	0.373 (0.271-0.475)	0.334 (0.206-0.462)
CT Tygerberg	Western Cape	0.370 (0.352-0.389)	0.377 (0.357-0.397)
Matzikama	Western Cape	0.369 (0.297-0.440)	0.407 (0.333-0.482)
CT Western	Western Cape	0.366 (0.352-0.379)	0.346 (0.332-0.360)
CT Mitchells Plain	Western Cape	0.364 (0.326-0.402)	0.309 (0.265-0.353)
Breede Valley	Western Cape	0.362 (0.314-0.410)	0.352 (0.302-0.402)
Govan Mbeki	Mpumalanga	0.361 (0.322-0.400)	0.310 (0.272-0.349)

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 that do not overlap with the previous week proportions and CIs that do not overlap with the previous week proportions and CIs that do not overlap with the previous week proportions and CIs



Figure 7. Proportion testing positive by health sub-district in South Africa for the week of 8-14 May 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 8-14 May 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 9. Proportion testing positive by health sub-district in the Eastern Cape Province for the week of 8-14 May 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 8-14 May 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%.

MAN	Mangaung	FS181	Masilonyana	FS191	Setsoto	FS196	Mantsopa
FS161	Letsemeng	FS182	Tokologo	FS192	Dihlabeng	FS201	Moqhaka
FS162	Kopanong	FS183	Tswelopele	FS193	Nketoana	FS203	Ngwathe
FS163	Mohokare	FS184	Matjhabeng	FS194	Maluti a Phofung	FS204	Metsimaholo
FS164	Naledi	FS185	Nala	FS195	Phumelela	FS205	Mafube



Figure 11. Proportion testing positive by health sub-district in Free State Province for the week of 8-14 May 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 8-14 May 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 13. Proportion testing positive by health sub-district in North West Province for the week of 8-14 May 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 8-14 May 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%.

MP301	Albert Luthuli	MP307	Govan Mbeki	MP316	Dr JS Moroka
MP302	Msukaligwa	MP311	Victor Khanye	MP321	Thaba Chweu
MP303	Mkhondo	MP312	Emalahleni	MP322	Mbombela
MP304	Pixley Ka Seme	MP313	Steve Tshwete	MP323	Umjindi
MP305	Lekwa	MP314	Emakhazeni	MP324	Nkomazi
MP306	Dipaleseng	MP315	Thembisile	MP325	Bushbuckridge



Figure 15. Proportion testing positive by health sub-district in Mpumalanga Province for the week of 8-14 May 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 8-14 May 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%.



Week start date of specimen collection

Figure 17. Number of antigen tests by province and overall percentage antigen tests, South Africa, 1 November 2020 – 14 May 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, 17 April – 14 May 2022.



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, 17 April – 14 May 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, 17 April – 14 May 2022.

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 97% of public sector facilities in the country) and private (approximately 76% 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. antigen-based 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.