

COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 44 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 6 November 2021 (Week 44 of 2021).

HIGHLIGHTS

- The number of tests reported in week 44 of 2021 (n=167,659) was similar to the number of tests reported in the previous week.
- In week 44 the testing rate was highest in Gauteng (380 per 100,000 persons) and lowest in Limpopo (69 per 100,000 persons).
- In week 44 the percentage testing positive was 1.1%, which was 0.3% lower than the previous week.
- In week 44 compared to the previous week, the percentage testing positive decreased in all provinces except in the North West and Limpopo provinces, where it remained unchanged.
- The percentage testing positive in week 44 was highest in the Northern Cape (2.5%) followed by the Free State (2.3%), and was less than 2% in all other provinces.

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Executive Summary:

- In the period 1 March 2020 through 6 November 2021, 18,608,099 tests for SARS-CoV-2 have been reported nationally: 16,063,181 PCR and 2,544,918 antigen tests.
- The number of tests reported in week 44 of 2021 (n=167,659: 136,318 PCR and 31,341 antigen tests) was similar to the number of tests reported in the previous week.
- Gauteng reported the largest proportion of tests (35.1%), followed by KwaZulu-Natal (19.8%) and Western Cape (15.6%).
- The overall testing rate decreased slightly from 284 per 100,000 persons in week 43 to 281 per 100,000 persons in week 44.
- In week 44, the testing rate was similar to the previous week in all provinces. The testing rate was highest in Gauteng (380 per 100,000 persons) and lowest in Limpopo (69 per 100,000 persons).
- The testing rate in week 44 was highest in the ≥80 years age group (633 per 100,000 persons).
- In week 44 the percentage testing positive was 1.1%, which was 0.3% lower than the previous week (1.4%, $P<0.001$).
- In the past week the percentage testing positive decreased by 0.4% in the public sector (2.0% in week 43 to 1.6% in week 44, $P<0.001$) and by 0.2% in the private sector (1.0% in week 43 to 0.8% in week 44, $P<0.001$).
- In week 44, compared to the previous week, the percentage testing positive remained unchanged in the North West and Limpopo provinces, and decreased in all other provinces.
- The percentage testing positive in week 44 was highest in the Northern Cape (2.5%) followed by the Free State (2.3%), and was less than 2% in all other provinces.
- The highest percentage testing positive (1.9%) was observed in the age groups 15-19 years and 10-14 years.
- Health sub-districts showing the highest percentage testing positive were concentrated in the Northern Cape (n=7) and Free State (n=6), with a further 5 in the Western Cape, and two in each of KwaZulu-Natal and Limpopo.
- Antigen tests accounted for 18.7% (31,341/167,659) of tests reported in week 44, however the number of antigen tests is likely underestimated due to under-reporting and delayed reporting of antigen tests.
- In week 44 the public sector accounted for 74.0% of antigen tests reported. The majority of antigen tests have been reported from KwaZulu-Natal (33.1%) and Gauteng (18.9%) provinces.
- The mean turnaround time for PCR tests reported in week 44 was 0.9 days; 1.2 days in the public sector and 0.7 days in the private sector. Turnaround times for public sector PCR tests decreased the Free State (2.1 days in week 43 to 1.3 days in week 44) and Limpopo (2.5 days in week 43 to 0.9 days in week 44) provinces in the past week and were <2 days in all provinces.
- The mean turnaround time for antigen tests reported in week 44 was 9.8 days in the public sector and 0.2 days in the private sector.

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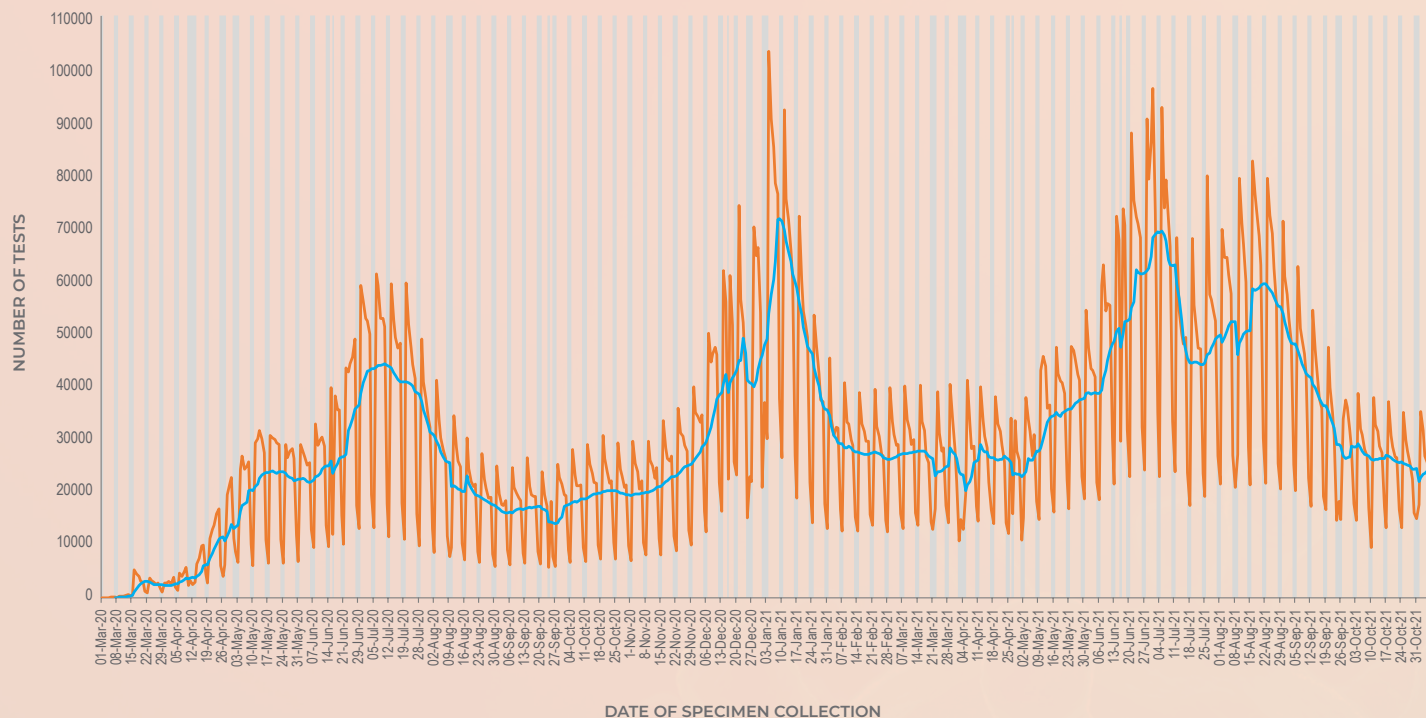


Figure 1. Number of SARS-CoV-2 tests reported by date of specimen collection, South Africa, 1 March 2020 – 6 November 2021. Blue line shows the 7-day moving average of the number of tests reported. Grey bars highlight weekend days and public holidays

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Table 1. Weekly number of SARS-CoV-2 tests and positive tests reported, South Africa, 3 January – 6 November 2021

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
1	03-Jan-21	501283 (2.7)	151046	30.1
2	10-Jan-21	418036 (2.2)	104804	25.1
3	17-Jan-21	327462 (1.8)	63266	19.3
4	24-Jan-21	249580 (1.3)	34642	13.9
5	31-Jan-21	203711 (1.1)	22364	11.0
6	07-Feb-21	193304 (1.0)	16471	8.5
7	14-Feb-21	190657 (1.0)	12185	6.4
8	21-Feb-21	184699 (1.0)	10385	5.6
9	28-Feb-21	189703 (1.0)	8688	4.6
10	07-Mar-21	193400 (1.0)	8328	4.3
11	14-Mar-21	185516 (1.0)	8153	4.4
12	21-Mar-21	173156 (0.9)	7352	4.2
13	28-Mar-21	163946 (0.9)	7061	4.3
14	04-Apr-21	180848 (1.0)	7290	4.0
15	11-Apr-21	185311 (1.0)	8844	4.8
16	18-Apr-21	184883 (1.0)	9467	5.1
17	25-Apr-21	159993 (0.9)	9180	5.7
18	02-May-21	193906 (1.0)	13456	6.9
19	09-May-21	239967 (1.3)	19932	8.3
20	16-May-21	248449 (1.3)	24211	9.7
21	23-May-21	262352 (1.4)	29715	11.3
22	30-May-21	269946 (1.5)	35970	13.3
23	06-Jun-21	335792 (1.8)	58860	17.5
24	13-Jun-21	366465 (2.0)	86657	23.6
25	20-Jun-21	428657 (2.3)	116715	27.2
26	27-Jun-21	484044 (2.6)	143896	29.7
27	04-Jul-21	439268 (2.4)	139412	31.7
28	11-Jul-21	316931 (1.7)	99379	31.4
29	18-Jul-21	308559 (1.7)	86855	28.1
30	25-Jul-21	345548 (1.9)	86876	25.1
31	01-Aug-21	365361 (2.0)	86493	23.7
32	08-Aug-21	353121 (1.9)	81907	23.2
33	15-Aug-21	414793 (2.2)	93819	22.6
34	22-Aug-21	385435 (2.1)	76939	20.0
35	29-Aug-21	336269 (1.8)	53881	16.0
36	05-Sep-21	293546 (1.6)	37886	12.9
37	12-Sep-21	254173 (1.4)	23419	9.2
38	19-Sep-21	202256 (1.1)	13678	6.8
39	26-Sep-21	199796 (1.1)	9223	4.6
40	03-Oct-21	187822 (1.0)	6250	3.3
41	10-Oct-21	184747 (1.0)	4851	2.6
42	17-Oct-21	179298 (1.0)	3299	1.8
43	24-Oct-21	169562 (0.9)	2455	1.4
44	31-Oct-21	167659 (0.9)	1821	1.1
Total		18,608,099 (100.0)	3,112,295	

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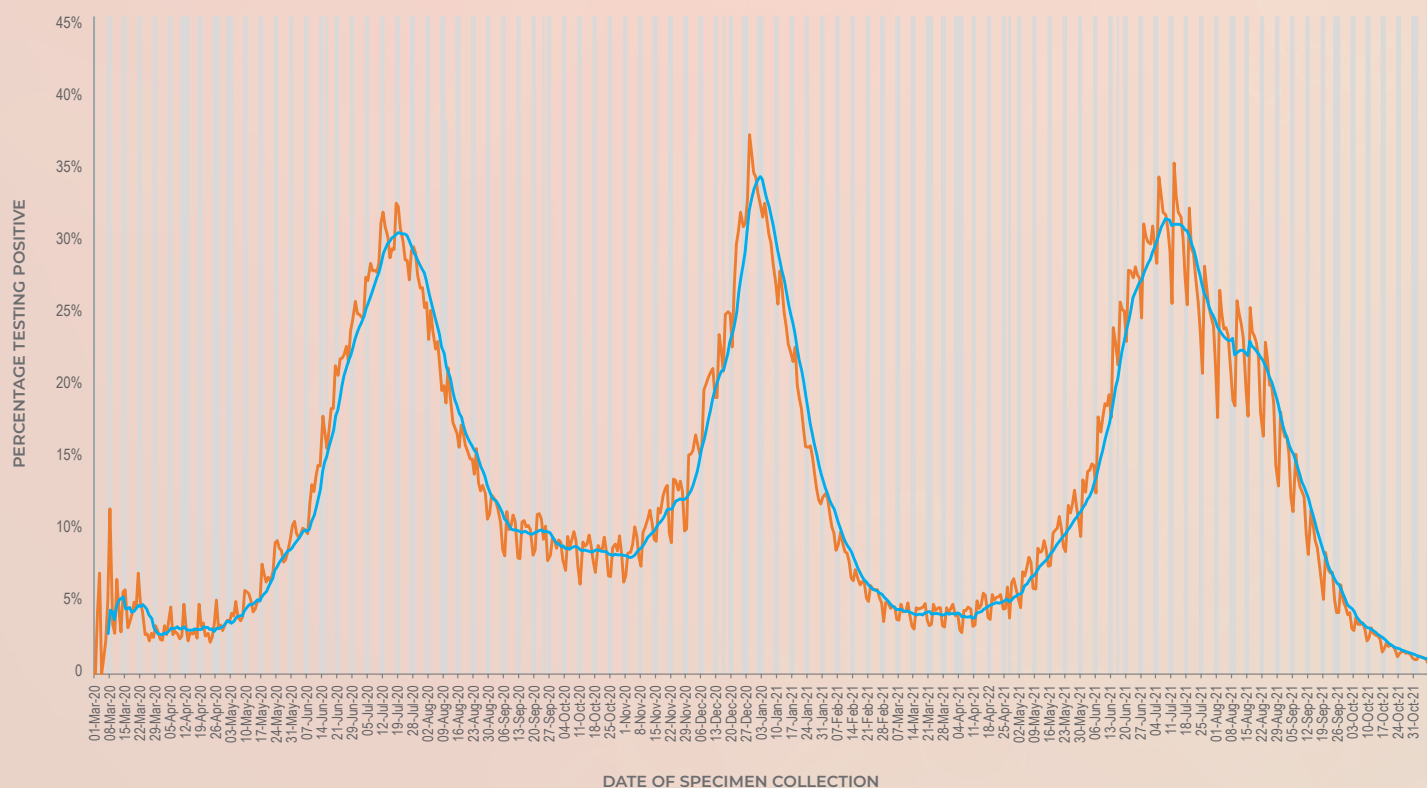


Figure 2. Percentage of tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March 2020 – 6 November 2021. Blue line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

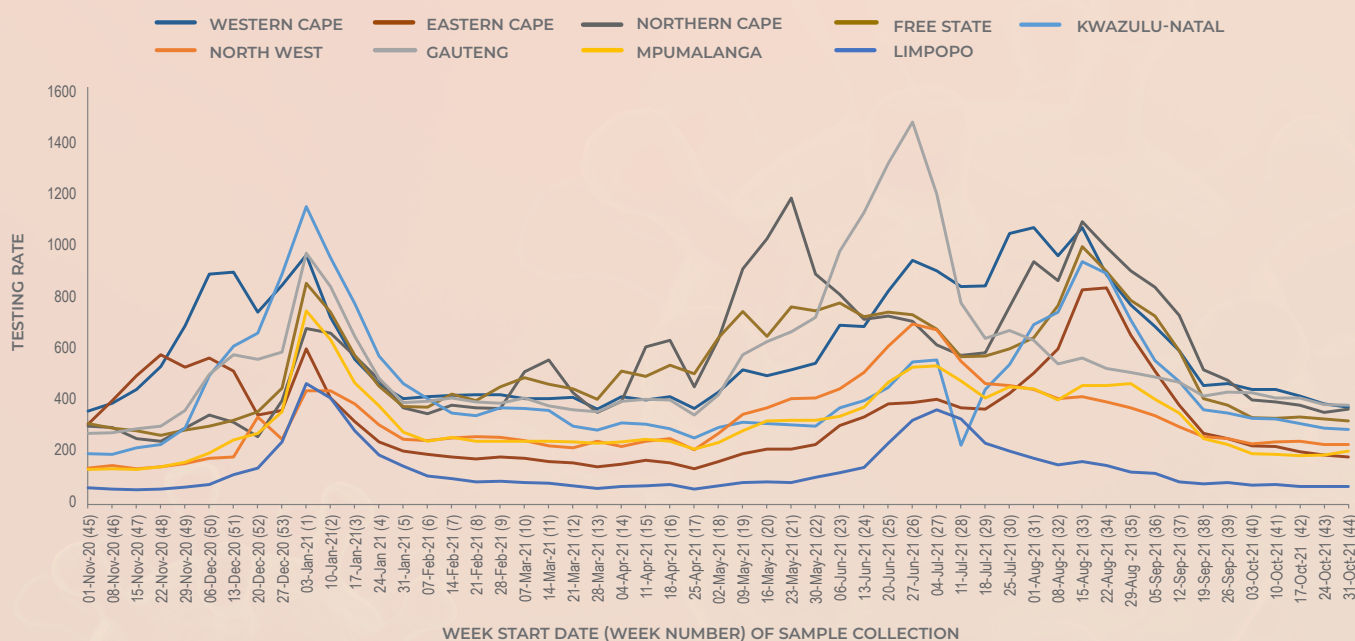


Figure 3. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 November 2020 – 6 November 2021

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Table 2. Weekly number of tests and positive tests reported by province, South Africa, 17 October – 6 November 2021

Province	Population ^a	17-23 Oct 2021		24-30 Oct 2021		31 Oct - 6 Nov 2021		Tests per 100,000 persons	Change in percentage positive ^b
		No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)		
Western Cape	7005741	29034	650 (2.2)	27068	443 (1.6)	26198	319 (1.2)	374	-0.4%
Eastern Cape	6734001	13673	235 (1.7)	12793	188 (1.5)	12240	141 (1.2)	182	-0.3%
Northern Cape	1292786	4930	284 (5.8)	4573	236 (5.2)	4736	119 (2.5)	366	-2.6%
Free State	2928903	9832	378 (3.8)	9626	286 (3.0)	9361	217 (2.3)	320	-0.7%
KwaZulu-Natal	11531628	35845	652 (1.8)	33707	427 (1.3)	33271	334 (1.0)	289	-0.3%
North West	4108816	9995	244 (2.4)	9480	141 (1.5)	9418	119 (1.3)	229	-0.2%
Gauteng	15488137	63155	593 (0.9)	59351	545 (0.9)	58838	409 (0.7)	380	-0.2%
Mpumalanga	4679786	8800	205 (2.3)	8905	148 (1.7)	9532	124 (1.3)	204	-0.4%
Limpopo	5852553	4015	57 (1.4)	4053	41 (1.0)	4027	39 (1.0)	69	0.0%
Unknown		19	1 (5.3)	6	0 (0.0)	38	0 (0.0)		
Total	59622350	179298	3299 (1.8)	169562	2455 (1.4)	167659	1821 (1.1)	281	-0.3%

^a 2020 Mid-year population Statistics SA

^b Current week compared to previous week

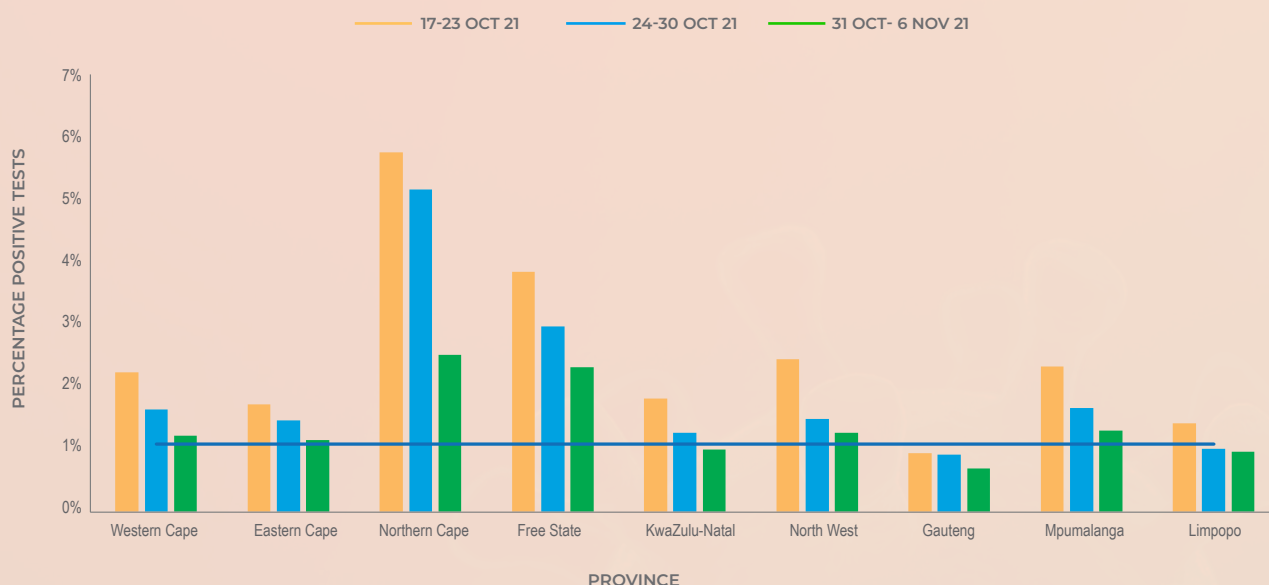


Figure 4. Weekly percentage testing positive by province, South Africa, 17 October – 6 November 2021. The horizontal blue line shows the national mean for week 44, beginning 31 October 2021

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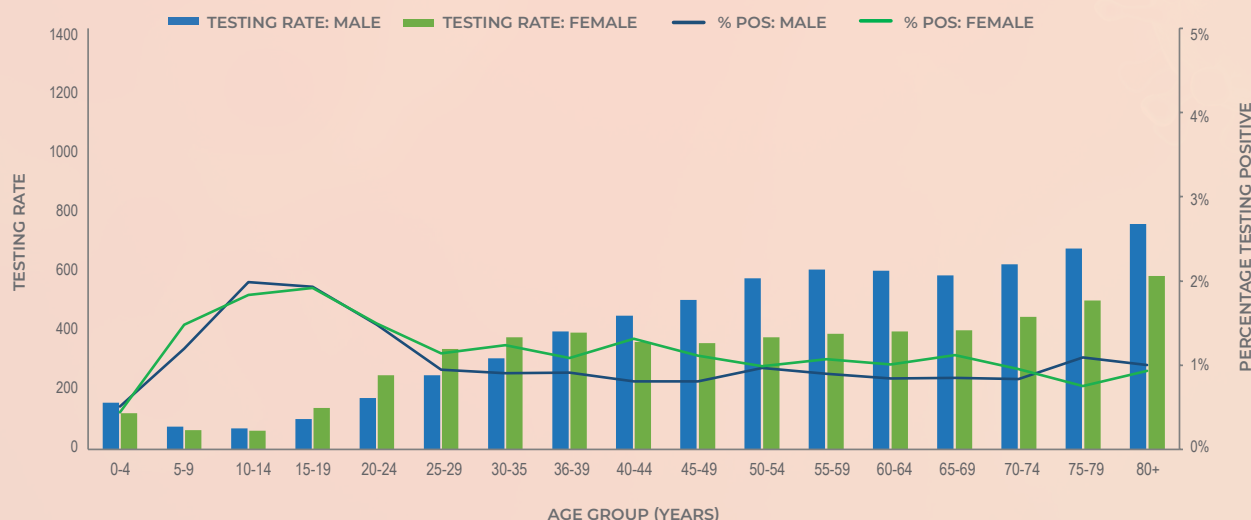


Figure 5. Testing rates per 100,000 persons and percentage testing positive by age group and sex, South Africa, week 44, 31 October – 6 November 2021

Table 3. Health sub-districts with the highest proportion testing positive based on public and private sector data for the week of 31 October – 6 November 2021

Health district or sub-district	Province	PTP (95% CI)	Previous week
Letsemeng	Free State	0.329 (0.221-0.437)	0.298 (0.185-0.411)
Masilonyana	Free State	0.216 (0.121-0.311)	...
Prince Albert	Western Cape	0.095 (0.006-0.185)	...
Karoo Hoogland	Northern Cape	0.091 (0.000-0.189)	0.137 (0.048-0.226)
Elias Motsoaledi	Limpopo	0.081 (0.005-0.156)	...
uPhongolo	KwaZulu-Natal	0.081 (0.013-0.148)	0.026 (0.000-0.062)
Ubuntu	Northern Cape	0.078 (0.004-0.153)	0.020 (0.000-0.059)
Ventersdorp	North West	0.076 (0.000-0.178)	...
Siyancoma	Northern Cape	0.075 (0.033-0.116)	0.061 (0.020-0.103)
Ga-Segonyana	Northern Cape	0.064 (0.027-0.100)	0.065 (0.029-0.101)
Makana	Eastern Cape	0.058 (0.019-0.098)	0.024 (0.003-0.044)
Tswelopele	Free State	0.058 (0.019-0.097)	0.036 (0.008-0.064)
Mafube	Free State	0.052 (0.000-0.123)	0.024 (0.000-0.056)
Beaufort West	Western Cape	0.052 (0.019-0.085)	0.008 (0.000-0.020)
Breede Valley	Western Cape	0.051 (0.031-0.071)	0.027 (0.013-0.040)
Theewaterskloof	Western Cape	0.050 (0.007-0.093)	0.040 (0.006-0.074)
Nala	Free State	0.046 (0.006-0.085)	0.058 (0.016-0.100)
Ndwedwe	KwaZulu-Natal	0.045 (0.000-0.094)	0.014 (0.000-0.035)
Phokwane	Northern Cape	0.042 (0.000-0.088)	...
Dr JS Moroka	Mpumalanga	0.041 (0.009-0.073)	0.042 (0.011-0.073)
Makhado	Limpopo	0.040 (0.002-0.079)	0.008 (0.000-0.024)
Dihlabeng	Free State	0.038 (0.023-0.053)	0.026 (0.014-0.039)
Oudtshoorn	Western Cape	0.037 (0.016-0.057)	0.040 (0.021-0.058)
Emthanjeni	Northern Cape	0.037 (0.008-0.066)	0.060 (0.028-0.092)
Khara Hais	Northern Cape	0.037 (0.022-0.051)	0.040 (0.024-0.056)

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.

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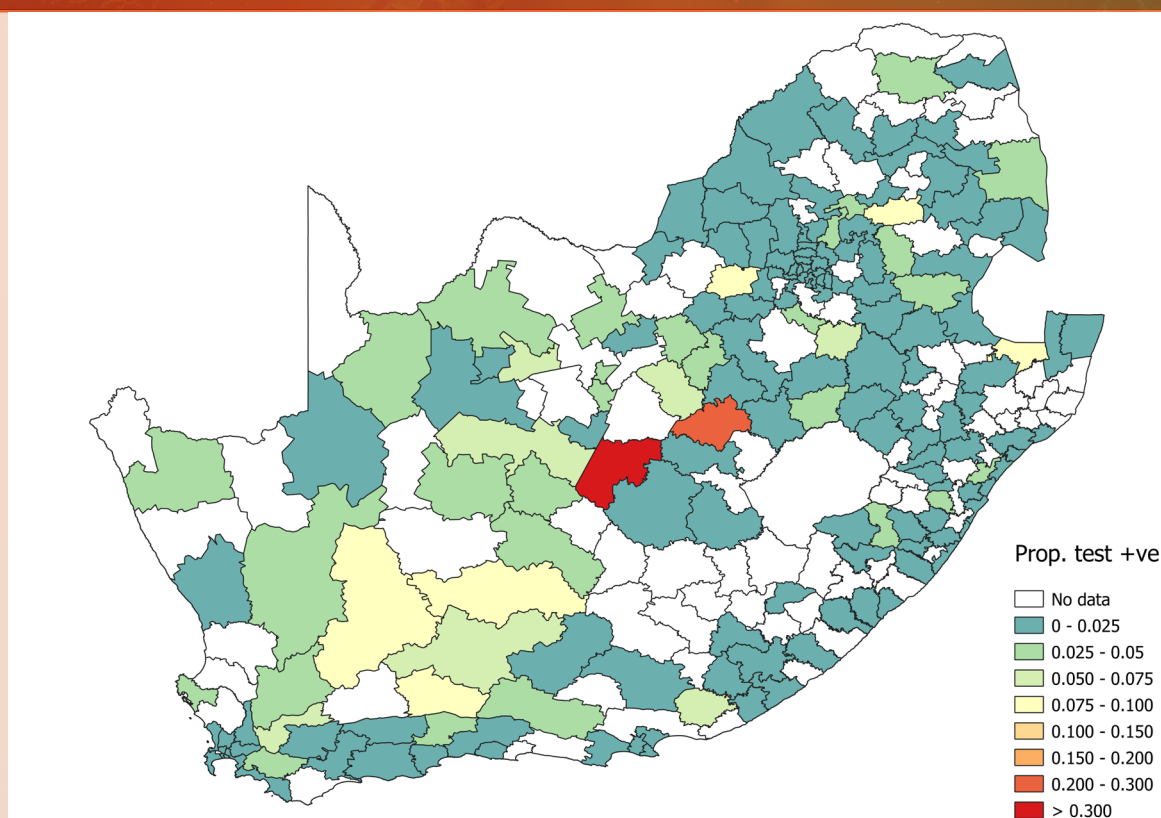


Figure 6. Proportion testing positive by health sub-district in South Africa for the week of 31 October – 6 November 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

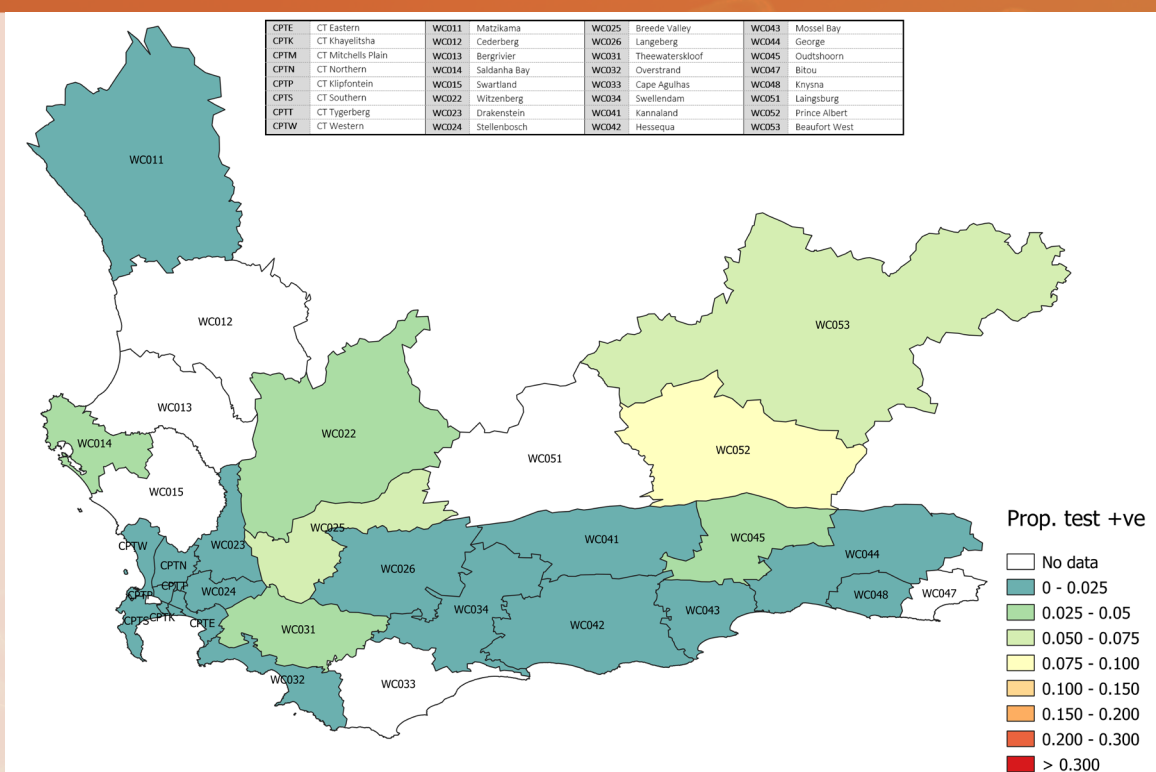


Figure 7. Proportion testing positive by health sub-district in the Western Cape Province for the week of 31 October – 6 November 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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BUF	Buffalo City	EC122	Mquma	EC135	Intsika Yethu	EC155	Nyaneni
EC101	Camdeboo	EC123	Great Kei	EC136	Emalahleni	EC156	Mhlonitlo
EC102	Blue Crane Route	EC124	Amahlathi	EC137	Engobo	EC157	King Sabata Dalindyebo
EC103	Ikwezi	EC126	Nqushwa	EC138	Sakhisizwe	EC441	Matatiele
EC104	Makana	EC127	Nkonkobe	EC141	Ekundini	EC442	Umtshvubu
EC105	Ndlambe	EC128	Nkuaba	EC142	Sonju	EC443	Mbilana
EC106	Sundays River Valley	EC131	Inosaba Yethemba	EC143	Maletswai	EC444	Ntabankulu
EC107	Baviaans	EC132	Tsolwana	EC144	Gariep	NMAA	Nelson Mandela Bay A
EC108	Kouga	EC133	Inkwanca	EC153	Nguza Hill	NMAB	Nelson Mandela Bay B
EC109	Kou-Kamma	EC134	Lukanji	EC154	Port St Johns	NMAC	Nelson Mandela Bay C
EC121	Muhadhe						

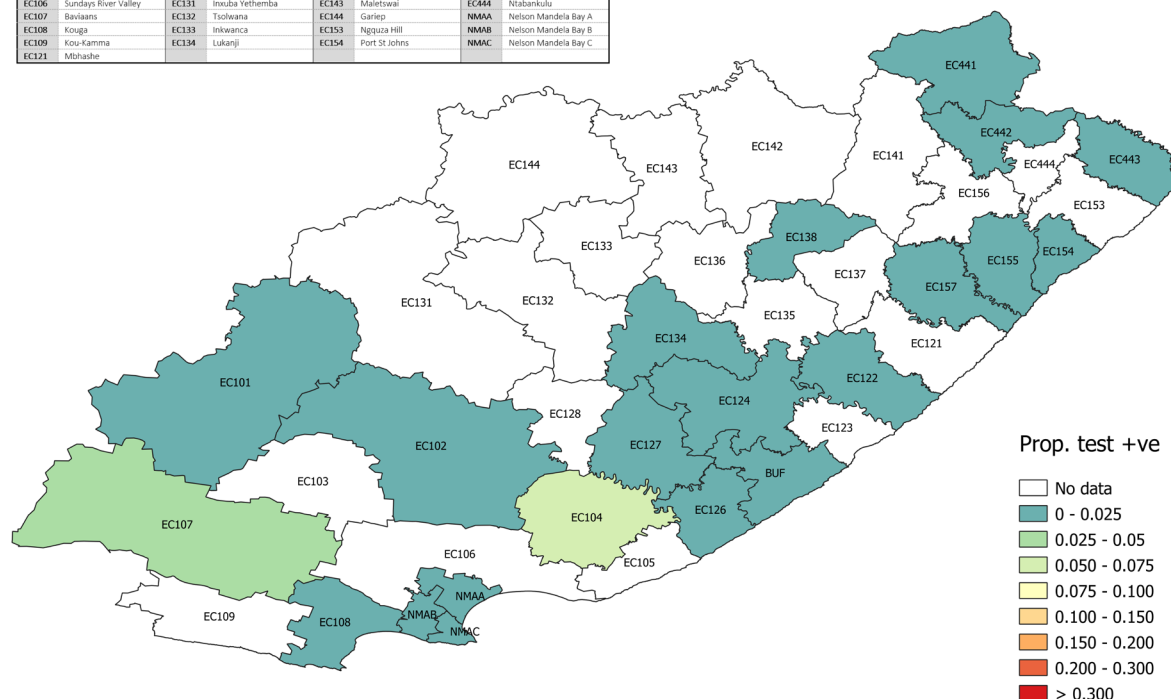


Figure 8. Proportion testing positive by health sub-district in the Eastern Cape Province for the week of 31 October – 6 November 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

NC061	Richtersveld	NC074	Kareeberg	NC085	Tsantabani
NC062	Nama Khoi	NC075	Rensselaersburg	NC086	Kgetlojele
NC064	Kamiesburg	NC076	Thembelintse	NC091	Sol Plaatje
NC065	Hantam	NC077	Siyathemba	NC092	Dikgatong
NC066	Karoo Hooiland	NC078	Siyancuma	NC093	Magareng
NC067	Enkai-Ma	NC081	Taler	NC094	Phalaborwa
NC071	Uburutu	NC082	Kai Igarib	NC451	Joe Morolong
NC072	Umsobomvu	NC083	/Khara Hais	NC452	Ga-Segonyana
NC073	Emtharjeni	NC084	IKheis	NC453	Gamagara

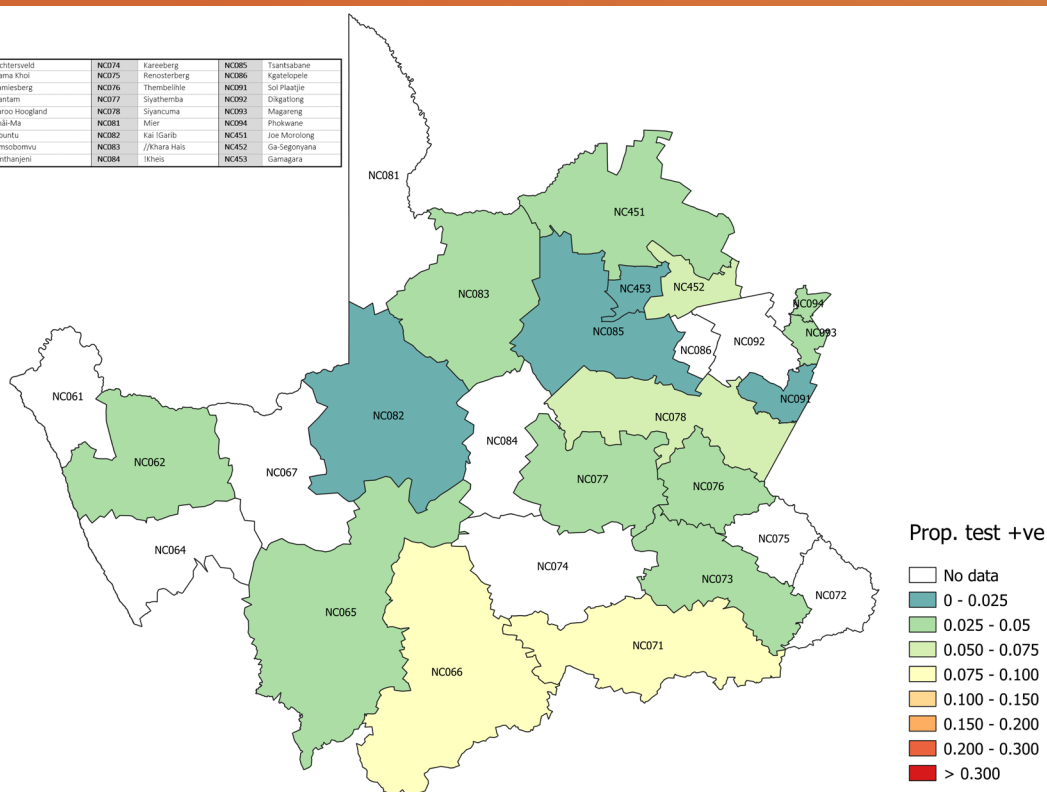


Figure 9. Proportion testing positive by health sub-district in Northern Cape Province for the week of 31 October – 6 November 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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

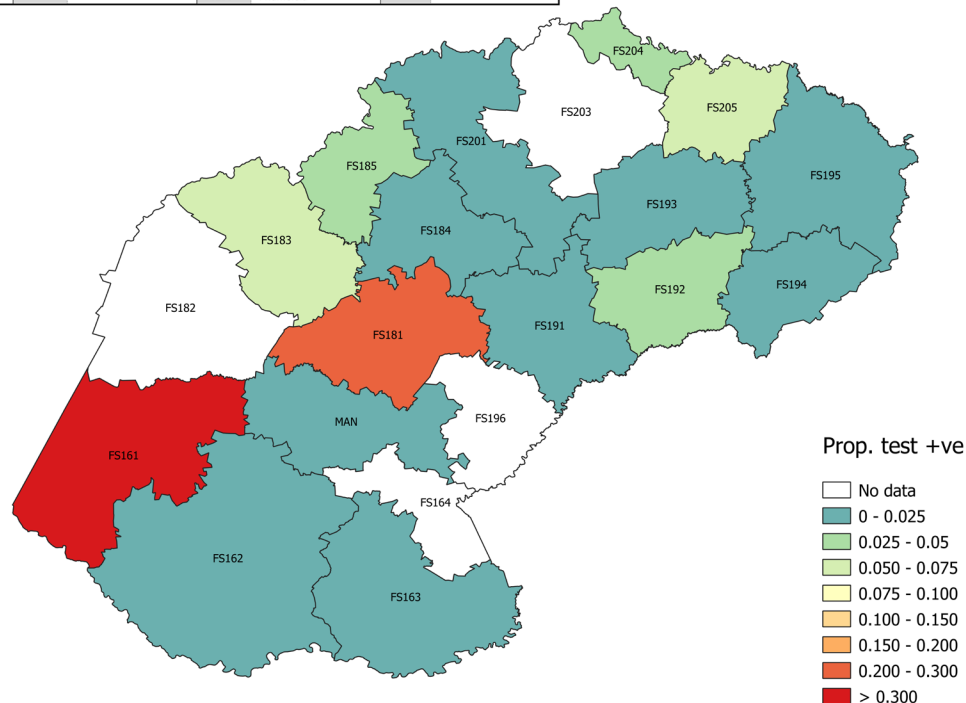


Figure 10. Proportion testing positive by health sub-district in Free State Province for the week of 31 October – 6 November 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

ETHN	eThekweni North	KZN233	Indaka	KZN273	The Big 5 False Bay
ETHS	eThekweni South	KZN234	Umtsheni	KZN274	Hlabisa
ETHW	eThekweni West	KZN235	Okhahlamba	KZN275	Mtubatuba
KZN211	Vulamehlo	KZN236	Imbabatane	KZN281	Mfolosi
KZN212	Umdoni	KZN241	Endumeni	KZN282	uMhlatuze
KZN213	Umkhumbi	KZN242	Nqutu	KZN283	Ntambanana
KZN214	uMuziwabantu	KZN244	Mzinga	KZN284	uMlalazi
KZN215	Ezingolweni	KZN245	Umvoti	KZN285	Mithorjaneni
KZN216	Hibiscus Coast	KZN252	Newcastle	KZN286	Nkandla
KZN221	uMkhawathli	KZN253	Emadlangeni	KZN291	Mandeni
KZN222	uMngeni	KZN254	Danrehauser	KZN292	KwaDukuza
KZN223	Mpofana	KZN261	eDumbe	KZN293	Ndwendwe
KZN224	Impendle	KZN262	uPhongolo	KZN294	Maphumulo
KZN225	The Msunduzi	KZN263	Abaqulusi	KZN431	Ingwe
KZN226	Mkhambathini	KZN265	Nongoma	KZN432	Kwa Sani
KZN227	Richmond	KZN266	Ulundi	KZN433	Greater Kokstad
KZN232	Emnambithi/Ladysmith	KZN271	Umlahluyalingana	KZN434	Ubuhlebezwe
		KZN272	Jozini	KZN435	Umtzinkhulu

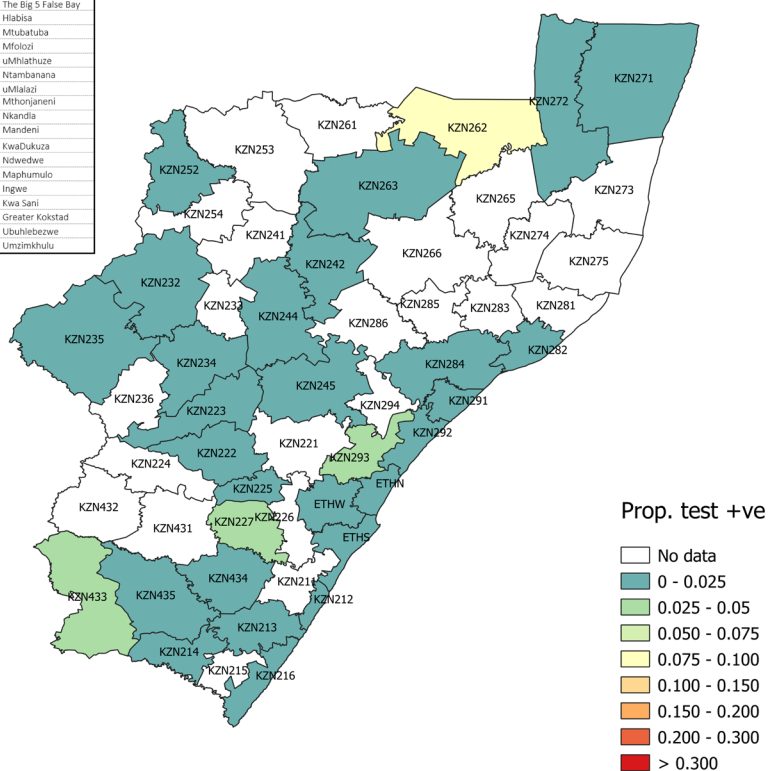


Figure 11. Proportion testing positive by health sub-district in KwaZulu-Natal Province for the week of 31 October – 6 November 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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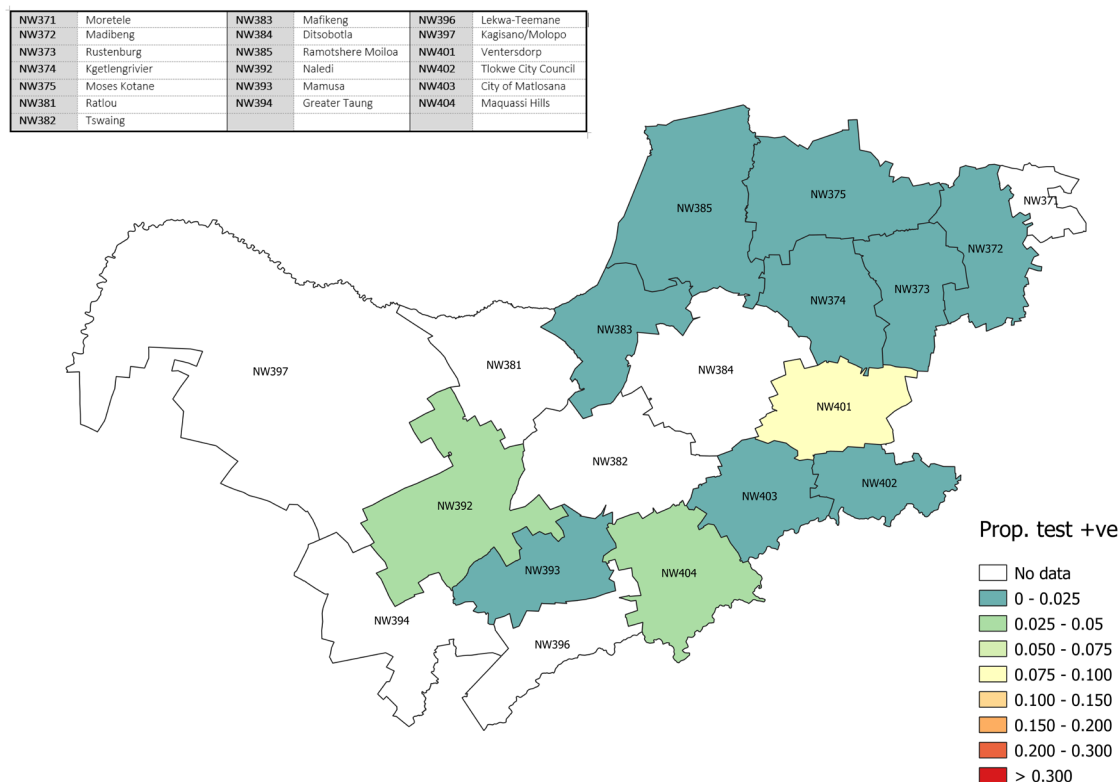


Figure 12. Proportion testing positive by health sub-district in North West Province for the week of 31 October – 6 November 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

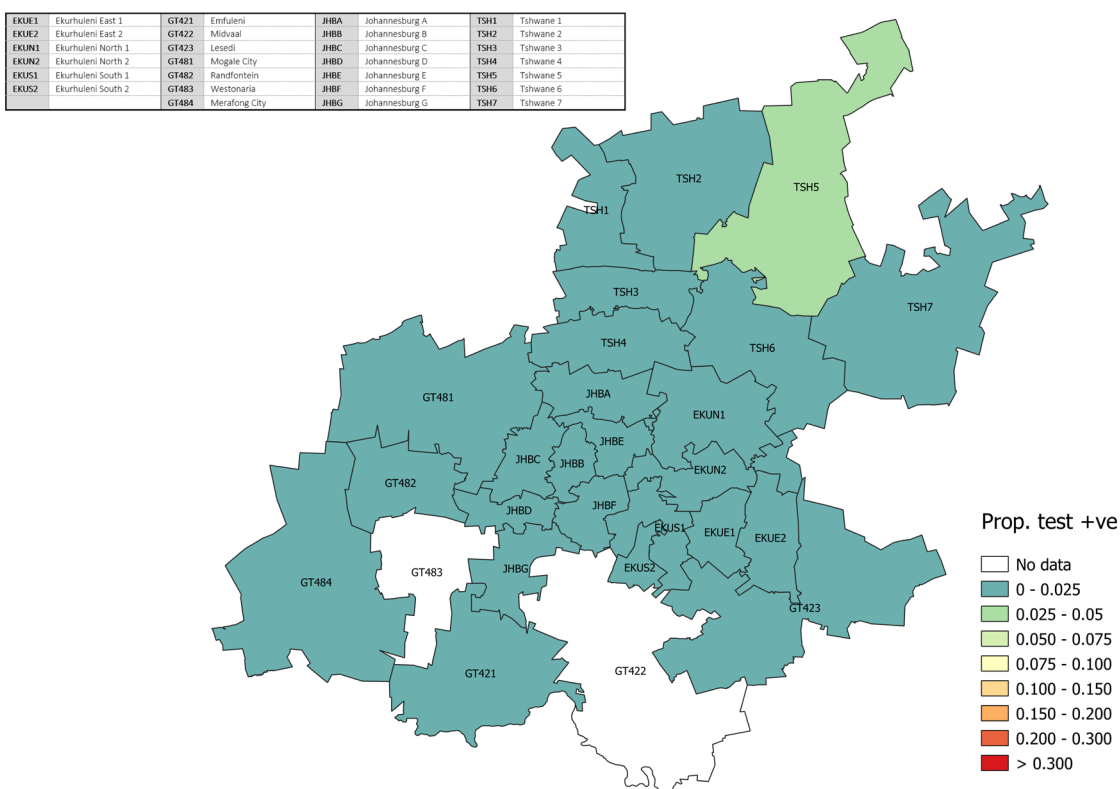


Figure 13. Proportion testing positive by health sub-district in Gauteng Province for the week of 31 October – 6 November 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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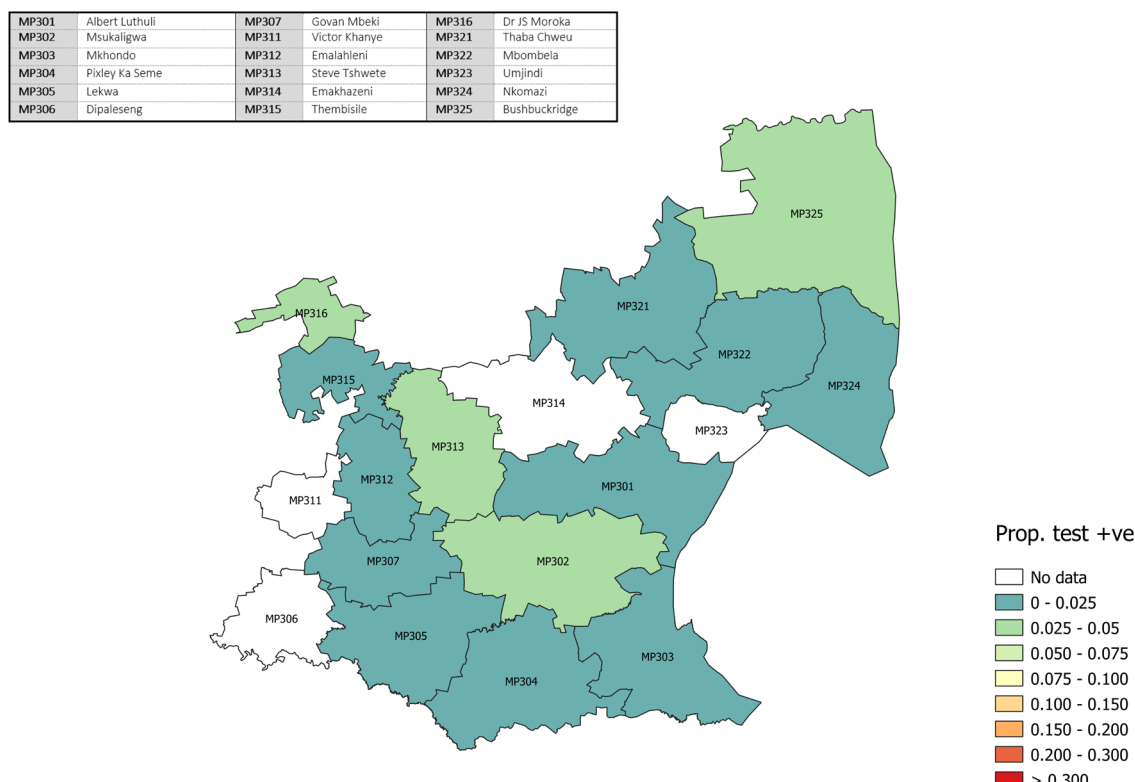


Figure 14. Proportion testing positive by health sub-district in Mpumalanga Province for the week of 31 October – 6 November 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

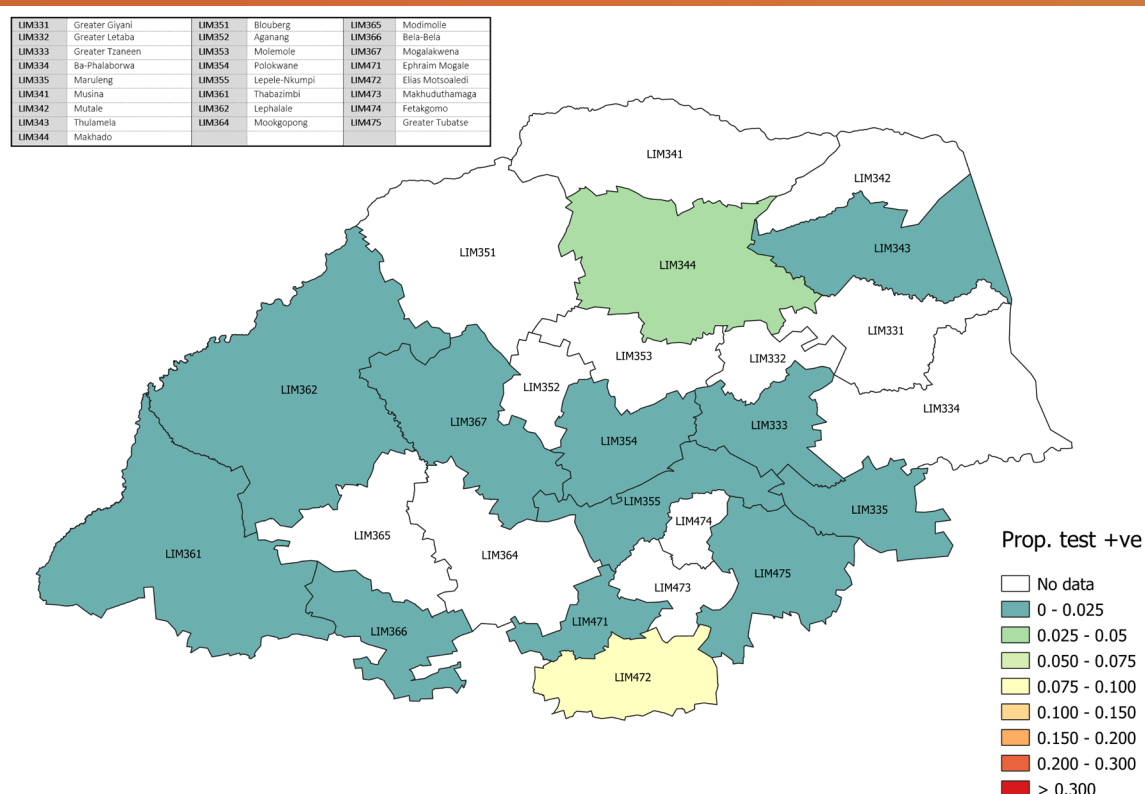


Figure 15. Proportion testing positive by health sub-district in Limpopo Province for the week of 31 October – 6 November 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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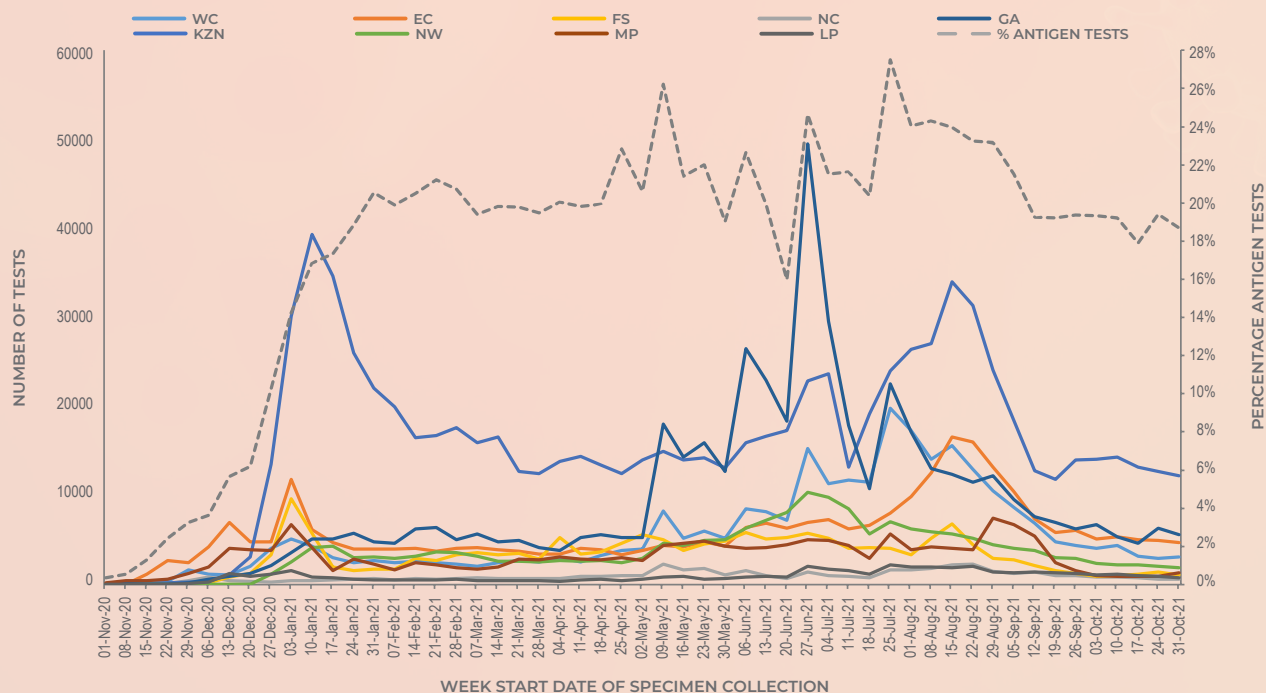


Figure 16. Number of antigen tests by province and overall percentage antigen tests, South Africa, 1 November 2020 – 6 November 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GA Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

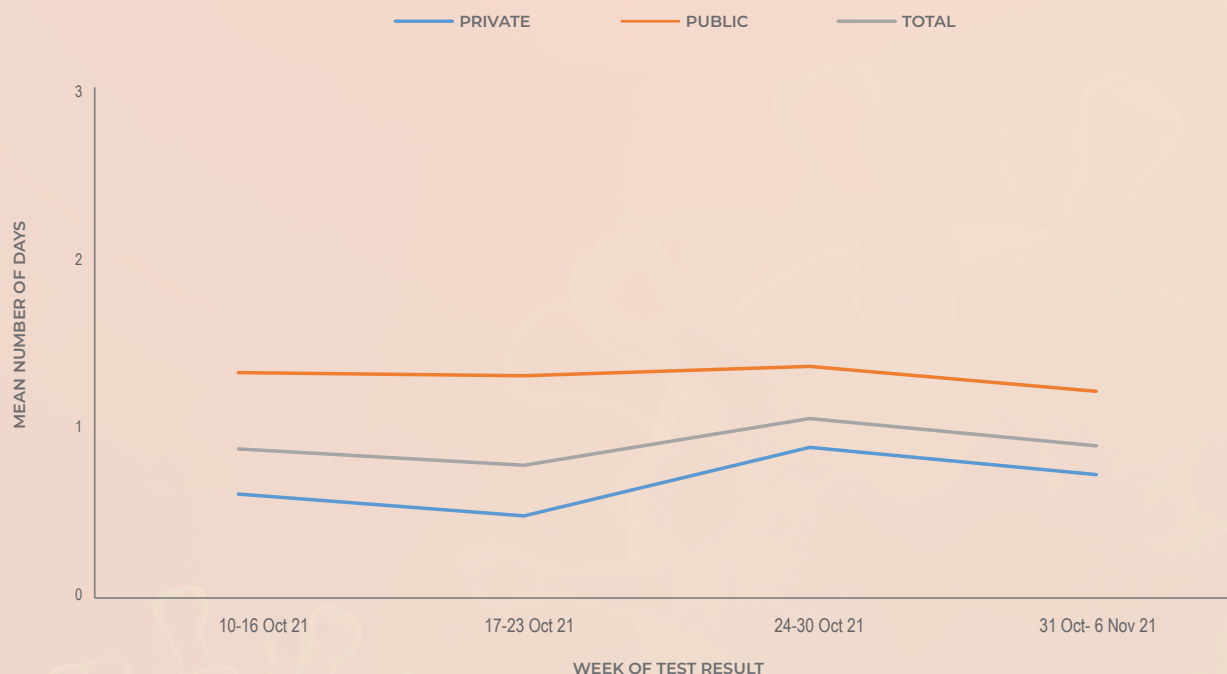


Figure 17. Mean number of days between date of specimen collection and date of test result for PCR tests by week of test result, South Africa, 10 October – 6 November 2021

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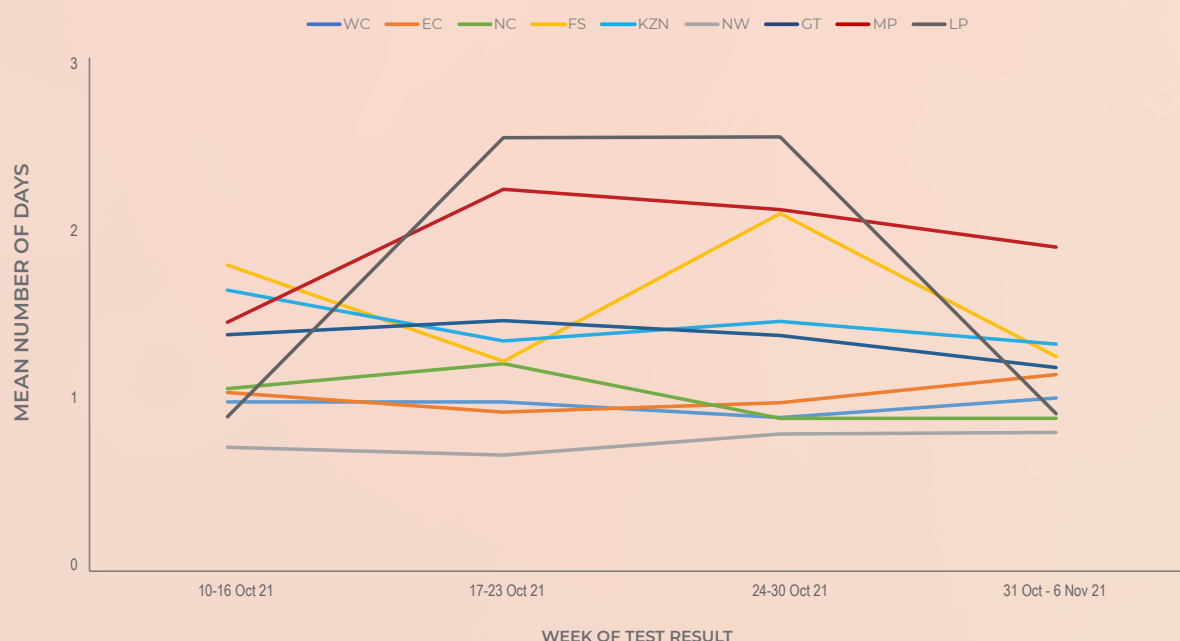


Figure 18. Mean number of days between date of specimen collection and date of test result for PCR tests in the public sector by week of test result and province, South Africa, 10 October – 6 November 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GT Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

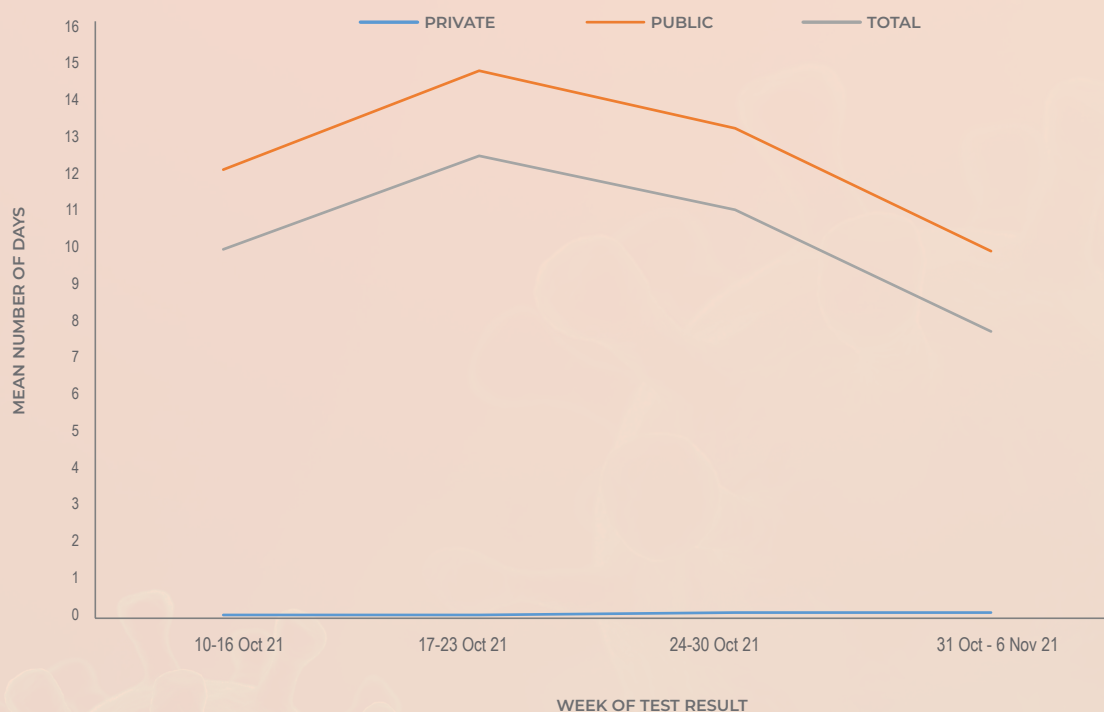


Figure 19. Mean number of days between date of specimen collection and date of test result for antigen tests by week of test result, South Africa, 10 October – 6 November 2021

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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 48 of 2020 onwards, test data were reported from the Notifiable Medical Conditions Surveillance System (NMCCS). 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 (almost every public sector facility 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. 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.