

COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 43 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 30 October 2021 (Week 43 of 2021).

HIGHLIGHTS

- The weekly number of reported tests continued to decrease, and in week 43 of 2021, 162,385 tests were reported.
- In week 43 the testing rate was highest in the Western Cape (372 per 100,000 persons) and lowest in Limpopo (67 per 100,000 persons).
- In week 43 the percentage testing positive was 1.4%, which was 0.4% lower than the previous week and the lowest since the start of the epidemic.
- In week 43 compared to the previous week, the percentage testing positive decreased in all provinces except in the Eastern Cape, Northern Cape, Gauteng and Limpopo provinces, where it remained unchanged.
- The percentage testing positive in week 43 was highest in the Northern Cape (5.2%) followed by the Free State (2.9%) and was less than 2% in all other provinces.

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Executive Summary:

- In the period 1 March 2020 through 30 October 2021, 18,427,878 tests for SARS-CoV-2 have been reported nationally: 15,923,776 PCR and 2,504,102 antigen tests.
- The weekly number of reported tests continued to decrease, and in week 43 162,385 (134, 145 PCR and 28,240 antigen) tests were reported. Gauteng reported the largest proportion of tests (35.3%), followed by KwaZulu-Natal (19.5%) and Western Cape (16.0%).
- The overall testing rate decreased from 300 per 100,000 persons in week 42 to 272 per 100,000 persons in week 43.
- In week 43, the testing rate decreased slightly in the Western Cape, Northern Cape, KwaZulu-Natal and Gauteng provinces, and was similar to the previous week in all other provinces. The testing rate was highest in the Western Cape (372 per 100,000 persons) and lowest in Limpopo (67 per 100,000 persons).
- The testing rate in week 43 was highest in the ≥80 years age group (619 per 100,000 persons).
- In week 43 the percentage testing positive was 1.4%, which was 0.4% lower than the previous week (1.8%, $P < 0.001$), and the lowest since the start of the epidemic in the country.
- In the past week the percentage testing positive decreased by 0.6% in the public sector (2.6% in week 42 to 2.0% in week 43, $P < 0.001$) and by 0.2% in the private sector (1.2% in week 42 to 1.0% in week 43, $P < 0.001$).
- In week 43 compared to the previous week, the percentage testing positive remained unchanged in the Eastern Cape, Northern Cape, Gauteng and Limpopo provinces, and decreased in all other provinces.
- The percentage testing positive in week 43 was highest in the Northern Cape (5.2%) followed by the Free State (2.9%), and was less than 2% in all other provinces.
- The percentage testing positive was highest in individuals aged 15-19 years (2.9%), followed by 10-14 years (2.8%).
- Health sub-districts showing the highest percentage testing positive were concentrated in the Northern Cape ($n=11$), with seven in the Free State, and one each in every other province.
- Antigen tests accounted for 17.4% (28,240/162,385) of tests reported in week 43, however the number of antigen tests is likely underestimated due to under-reporting and delayed reporting of antigen tests.
- In week 43 the public sector accounted for 75.1% of antigen tests reported. The majority of antigen tests have been reported from KwaZulu-Natal (33.1%) and Gauteng (18.9%) provinces. In the past few weeks there has been a decrease in the number of antigen tests reported.
- The mean turnaround time for PCR tests reported in week 43 was 1.1 days; 1.4 days in the public sector and 0.9 days in the private sector. Turnaround times for public sector PCR tests were >2 days in the Free State (2.1), Mpumalanga (2.1 days) and Limpopo (2.5 days) provinces in the past week.
- The mean turnaround time for antigen tests reported in week 43 was 13.7 days in the public sector and 0.2 days in the private sector.

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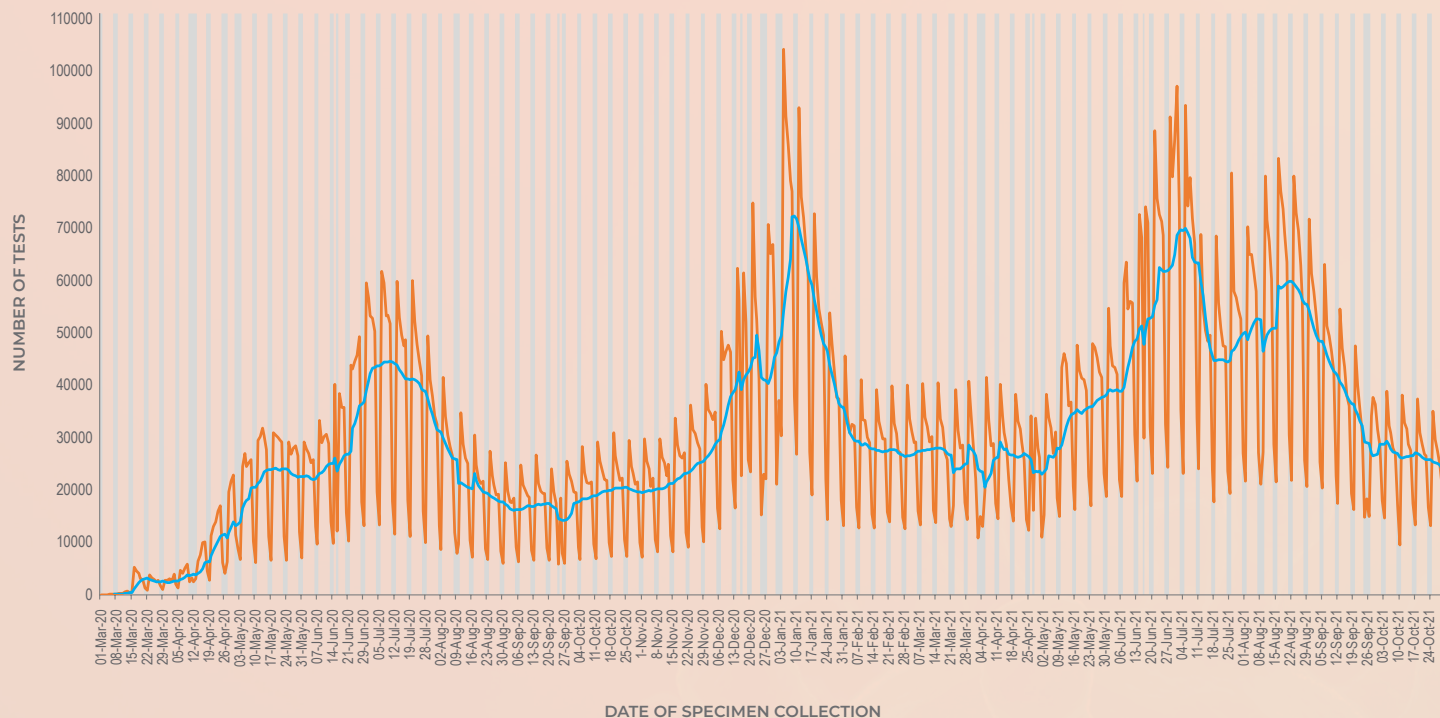


Figure 1. Number of SARS-CoV-2 tests reported by date of specimen collection, South Africa, 1 March 2020 – 30 October 2021. Blue line shows the 7-day moving average of the number of tests reported. Grey bars highlight weekend days and public holidays

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Table 1. Weekly number of SARS-CoV-2 tests and positive tests reported, South Africa, 3 January – 30 October 2021

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
1	03-Jan-21	501273 (2.7)	151044	30.1
2	10-Jan-21	418029 (2.3)	104801	25.1
3	17-Jan-21	327461 (1.8)	63266	19.3
4	24-Jan-21	249571 (1.4)	34641	13.9
5	31-Jan-21	203664 (1.1)	22362	11.0
6	07-Feb-21	193302 (1.0)	16471	8.5
7	14-Feb-21	190650 (1.0)	12184	6.4
8	21-Feb-21	184699 (1.0)	10385	5.6
9	28-Feb-21	189698 (1.0)	8688	4.6
10	07-Mar-21	193396 (1.0)	8326	4.3
11	14-Mar-21	185515 (1.0)	8153	4.4
12	21-Mar-21	173007 (0.9)	7351	4.2
13	28-Mar-21	163940 (0.9)	7061	4.3
14	04-Apr-21	180843 (1.0)	7290	4.0
15	11-Apr-21	185302 (1.0)	8844	4.8
16	18-Apr-21	184870 (1.0)	9467	5.1
17	25-Apr-21	159992 (0.9)	9180	5.7
18	02-May-21	193894 (1.1)	13453	6.9
19	09-May-21	239963 (1.3)	19931	8.3
20	16-May-21	248441 (1.3)	24210	9.7
21	23-May-21	262347 (1.4)	29714	11.3
22	30-May-21	269933 (1.5)	35969	13.3
23	06-Jun-21	335746 (1.8)	58859	17.5
24	13-Jun-21	366418 (2.0)	86653	23.6
25	20-Jun-21	428531 (2.3)	116699	27.2
26	27-Jun-21	483677 (2.6)	143836	29.7
27	04-Jul-21	439167 (2.4)	139371	31.7
28	11-Jul-21	316899 (1.7)	99350	31.4
29	18-Jul-21	308513 (1.7)	86843	28.1
30	25-Jul-21	345515 (1.9)	86857	25.1
31	01-Aug-21	365299 (2.0)	86484	23.7
32	08-Aug-21	353051 (1.9)	81901	23.2
33	15-Aug-21	414701 (2.3)	93810	22.6
34	22-Aug-21	385389 (2.1)	76925	20.0
35	29-Aug-21	336157 (1.8)	53871	16.0
36	05-Sep-21	293290 (1.6)	37879	12.9
37	12-Sep-21	253682 (1.4)	23417	9.2
38	19-Sep-21	201370 (1.1)	13674	6.8
39	26-Sep-21	199220 (1.1)	9220	4.6
40	03-Oct-21	187183 (1.0)	6243	3.3
41	10-Oct-21	184271 (1.0)	4846	2.6
42	17-Oct-21	178758 (1.0)	3286	1.8
43	24-Oct-21	162385 (0.9)	2329	1.4
Total		18,427,878 (100.0)	3,110,058	

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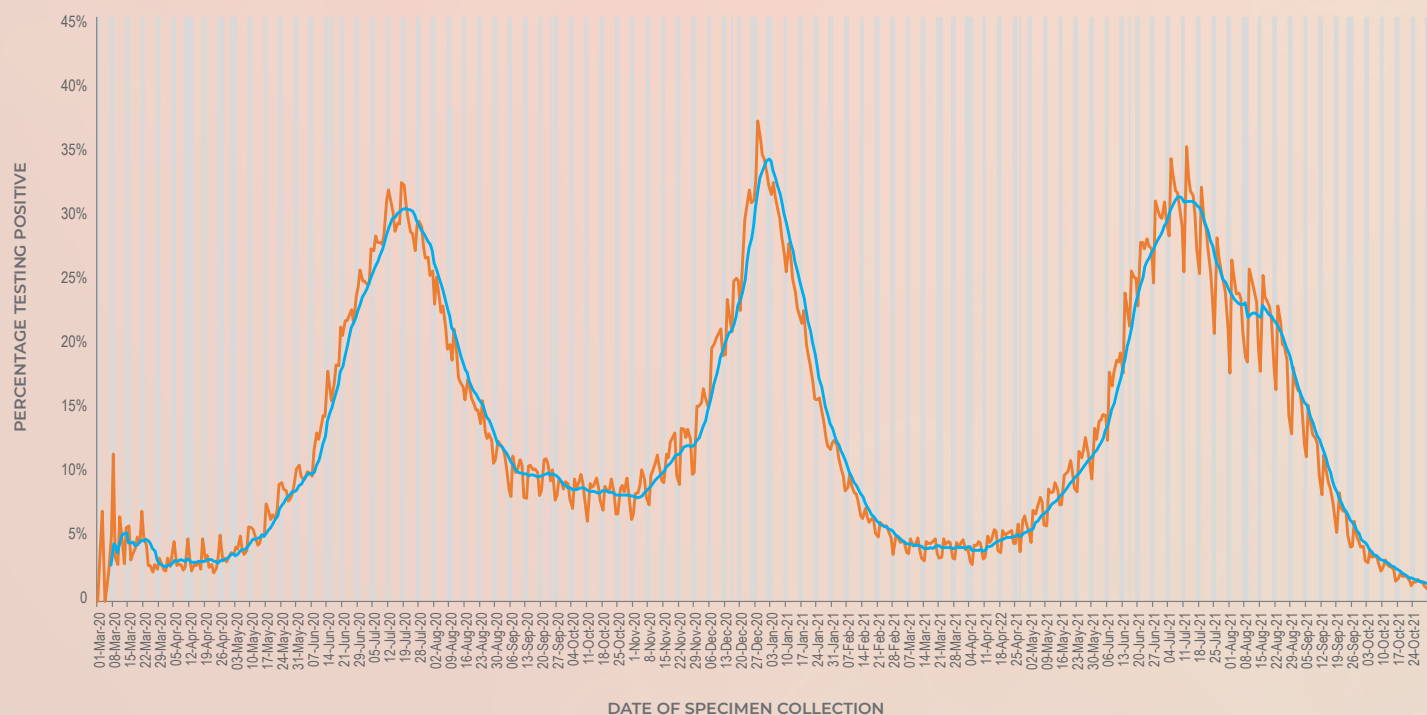


Figure 2. Percentage of tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March 2020 – 30 October 2021. Blue line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

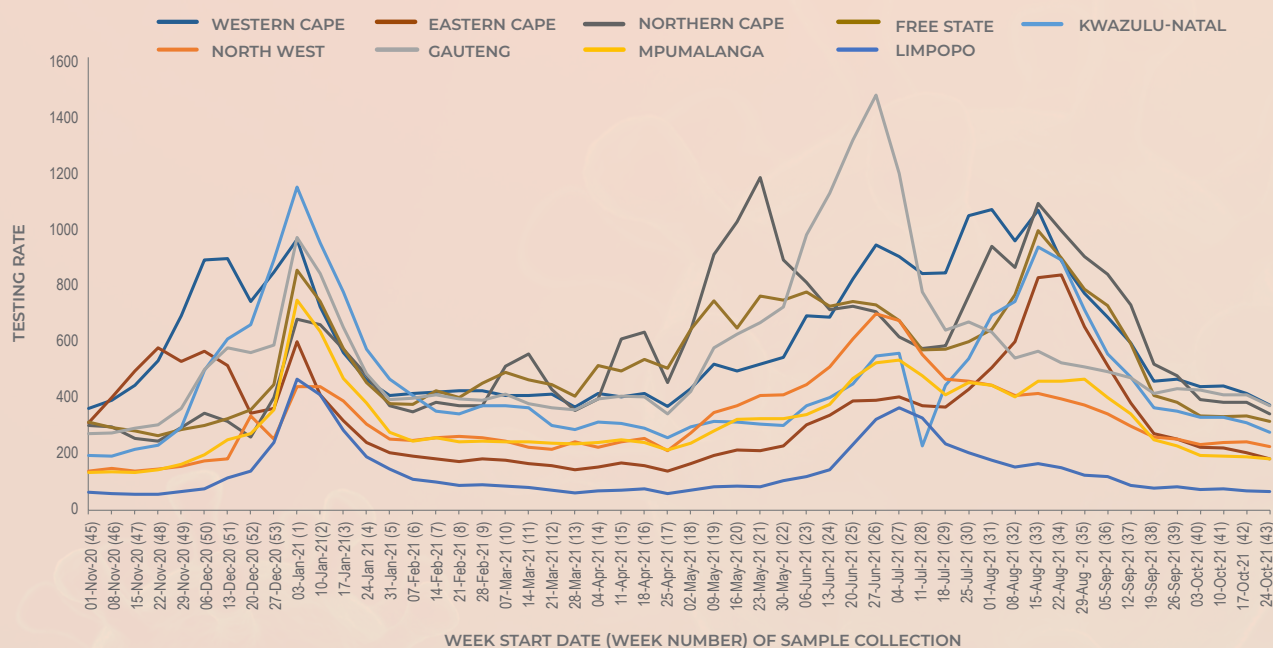


Figure 3. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 November 2020 – 30 October 2021

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Table 2. Weekly number of tests and positive tests reported by province, South Africa, 10-30 October 2021

Province	Population ^a	10-16 Oct 2021		17-23 Oct 2021		24-30 Oct 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	30710	1043 (3.4)	28876	649 (2.2)	26052	430 (1.7)	372	-0.6%
Eastern Cape	6734001	14893	452 (3.0)	13659	235 (1.7)	12248	183 (1.5)	182	-0.2%
Northern Cape	1292786	4928	433 (8.8)	4923	284 (5.8)	4388	230 (5.2)	339	-0.5%
Free State	2928903	9666	534 (5.5)	9734	372 (3.8)	9186	265 (2.9)	314	-0.9%
KwaZulu-Natal	11531628	37833	922 (2.4)	35796	652 (1.8)	31676	404 (1.3)	275	-0.5%
North West	4108816	9846	305 (3.1)	9962	244 (2.4)	9203	138 (1.5)	224	-0.9%
Gauteng	15488137	63025	840 (1.3)	63004	588 (0.9)	57274	508 (0.9)	370	0.0%
Mpumalanga	4679786	8964	250 (2.8)	8789	204 (2.3)	8459	132 (1.6)	181	-0.8%
Limpopo	5852553	4387	67 (1.5)	3996	57 (1.4)	3893	39 (1.0)	67	-0.4%
Unknown		19	0 (0.0)	19	1 (5.3)	6	0 (0.0)		
Total	59622350	184271	4846 (2.6)	178758	3286 (1.8)	162385	2329 (1.4)	272	-0.4%

^a 2020 Mid-year population Statistics SA

^b Current week compared to previous week

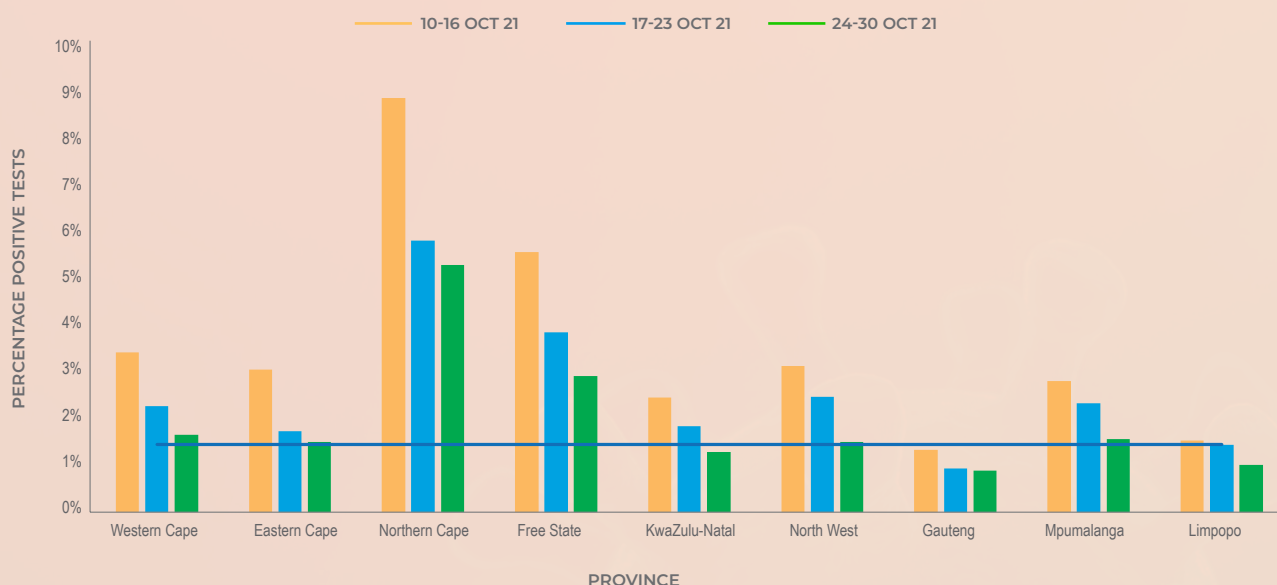


Figure 4. Weekly percentage testing positive by province, South Africa, 10-30 October 2021. The horizontal blue line shows the national mean for week 43, beginning 24 October 2021

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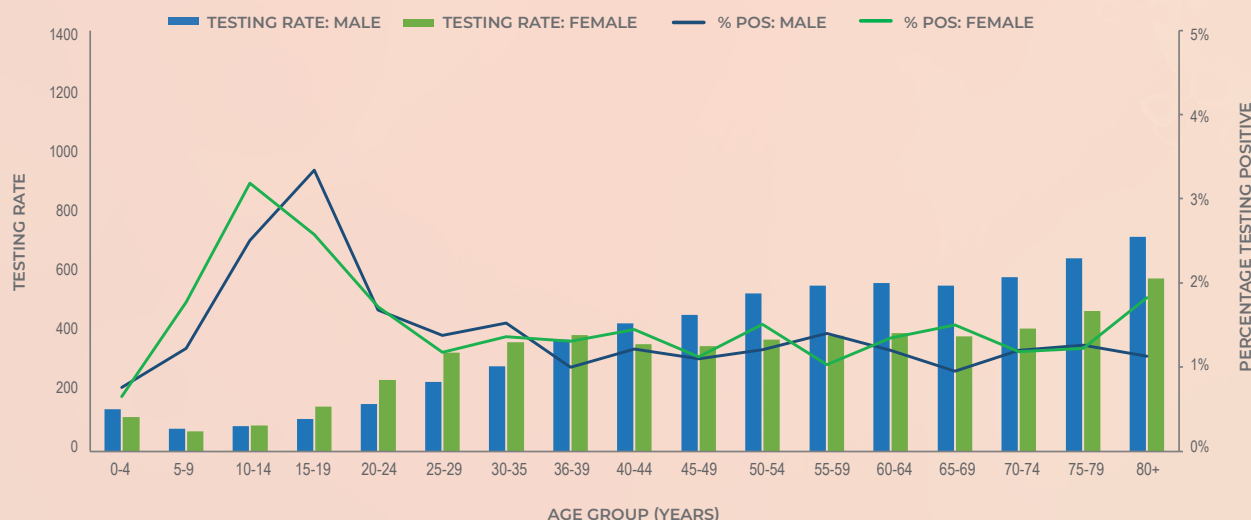


Figure 5. Testing rates per 100,000 persons and percentage testing positive by age group and sex, South Africa, week 43, 24-30 October 2021

Table 3. Health sub-districts with the highest proportion testing positive based on public and private sector data for the week of 24-30 October 2021

Health district or sub-district	Province	PTP (95% CI)	Previous week
Khâi-Ma	Northern Cape	0.172 (0.046-0.298)	0.172 (0.055-0.288)
Karoo Hoogland	Northern Cape	0.137 (0.048-0.226)	0.083 (0.033-0.133)
Phumelela	Free State	0.120 (0.007-0.233)	0.045 (0.002-0.089)
Hantam	Northern Cape	0.111 (0.049-0.174)	0.136 (0.075-0.197)
Nama Khoi	Northern Cape	0.109 (0.068-0.149)	0.092 (0.056-0.127)
Dikgatlong	Northern Cape	0.101 (0.016-0.185)	0.049 (0.000-0.104)
Modimolle	Limpopo	0.093 (0.000-0.216)	0.033 (0.000-0.078)
Camagara	Northern Cape	0.088 (0.047-0.129)	0.040 (0.013-0.068)
Swellendam	Western Cape	0.085 (0.034-0.136)	0.074 (0.027-0.120)
Magareng	Northern Cape	0.075 (0.000-0.156)	0.044 (0.000-0.105)
Kou-Kamma	Eastern Cape	0.074 (0.011-0.137)	0.059 (0.009-0.109)
Nala	Free State	0.073 (0.021-0.124)	0.008 (0.000-0.023)
Metsimaholo	Free State	0.068 (0.031-0.106)	0.016 (0.000-0.032)
Tshwane 5	Gauteng	0.065 (0.014-0.116)	0.048 (0.010-0.085)
Ga-Segonyana	Northern Cape	0.065 (0.029-0.101)	0.108 (0.062-0.154)
Ditsobotla	North West	0.064 (0.023-0.105)	0.040 (0.000-0.085)
Setsoto	Free State	0.062 (0.023-0.101)	0.087 (0.044-0.129)
Siyancuma	Northern Cape	0.061 (0.020-0.103)	0.161 (0.094-0.229)
Emthanjeni	Northern Cape	0.060 (0.028-0.092)	0.070 (0.040-0.101)
Kopanong	Free State	0.056 (0.008-0.104)	0.041 (0.006-0.076)
Ngwathe	Free State	0.052 (0.000-0.123)	0.033 (0.000-0.077)
Umsobomvu	Northern Cape	0.051 (0.000-0.120)	0.139 (0.025-0.253)
Dr JS Moroka	Mpumalanga	0.048 (0.013-0.082)	0.027 (0.001-0.052)
Tokologo	Free State	0.047 (0.002-0.093)	0.008 (0.000-0.025)
uMlalazi	KwaZulu-Natal	0.046 (0.022-0.070)	0.030 (0.012-0.047)

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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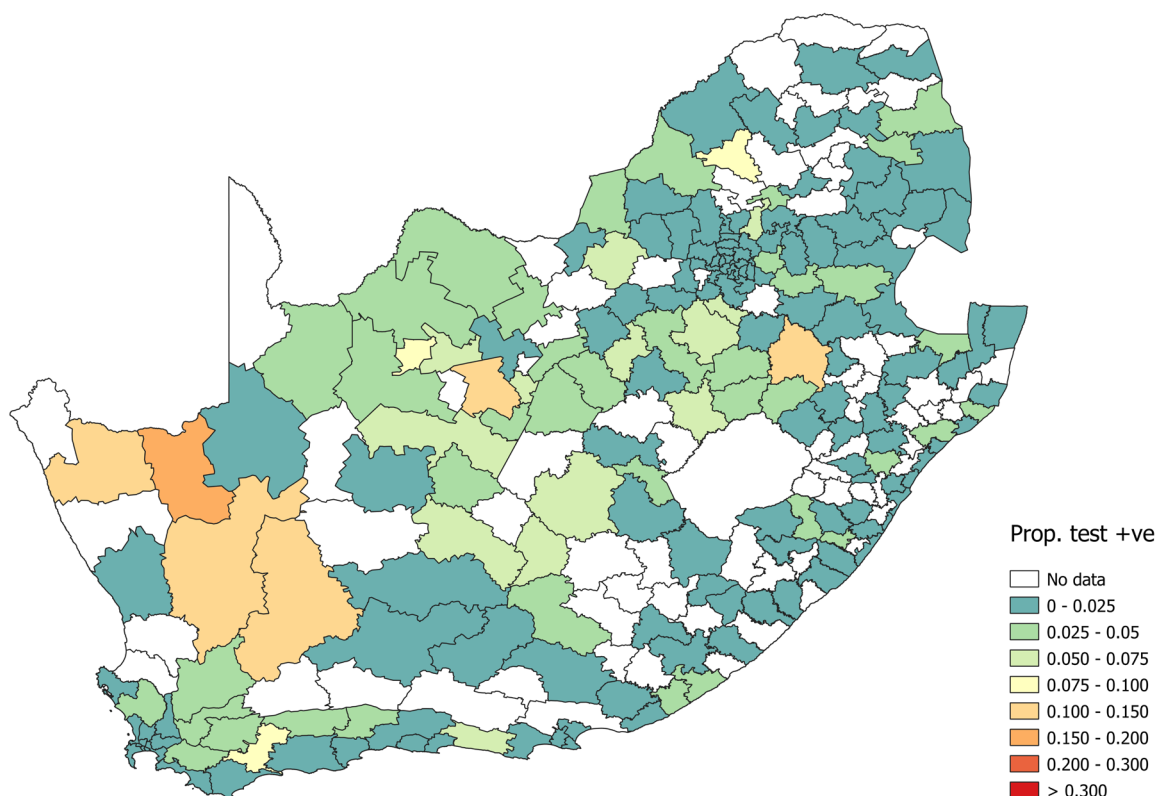


Figure 6. Proportion testing positive by health sub-district in South Africa for the week of 24-30 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

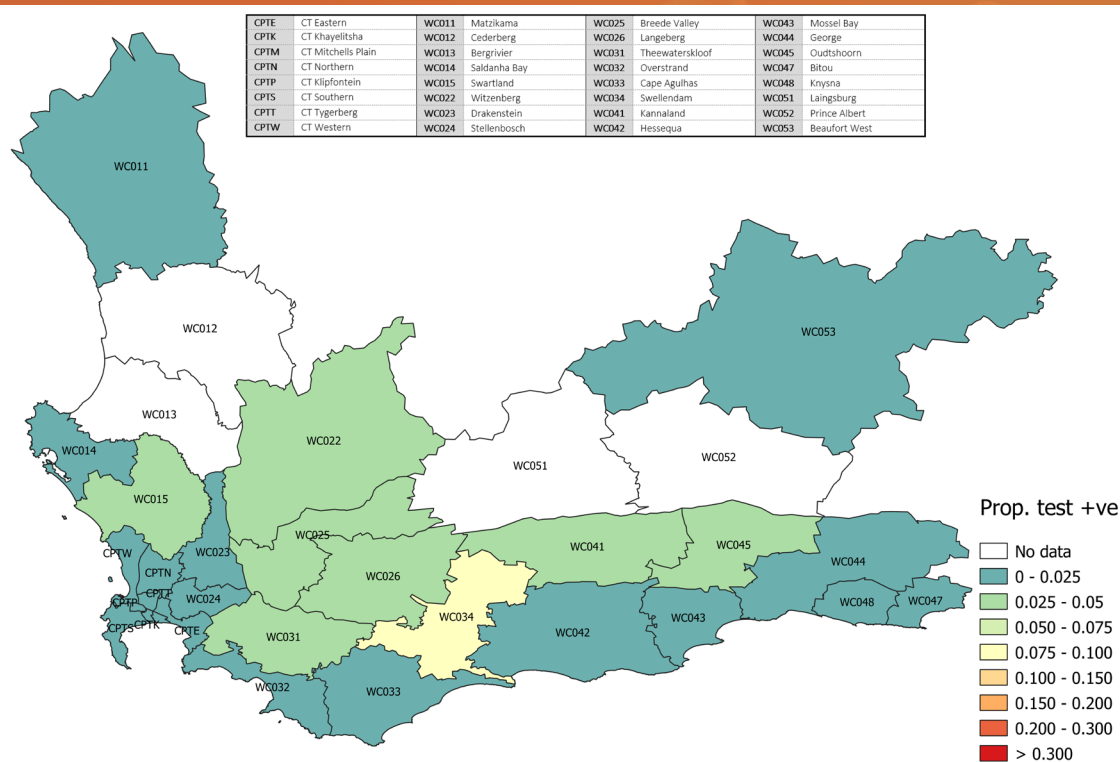


Figure 7. Proportion testing positive by health sub-district in the Western Cape Province for the week of 24-30 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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BUF	Buffalo City	EC122	Mquma	EC135	Intsika Yethu	EC155	Nyanweni
EC101	Candelo	EC123	Great Kei	EC136	Emalahleni	EC156	Mhlontlo
EC102	Blue Crane Route	EC124	Amahathi	EC137	Engcobo	EC157	King Sabata Dalindyebo
EC103	Ilwazi	EC126	Ngushwa	EC138	Sakhisizwe	EC441	Matatiele
EC104	Makana	EC127	Nkonkobe	EC141	Ekundini	EC442	Umtzimbu
EC105	Ndlambe	EC128	Ndaba	EC142	Sengu	EC443	Milizana
EC106	Sundays River Valley	EC131	Inxuba Yethemba	EC143	Maletswai	EC444	Ntabankulu
EC107	Baviaans	EC132	Tsolwana	EC144	Gariep	NMAA	Nelson Mandela Bay A
EC108	Kouga	EC133	Inkwanca	EC153	Ngozo Hill	NMAB	Nelson Mandela Bay B
EC109	Kou-Ramama	EC134	Lukani	EC154	Port St Johns	NMAC	Nelson Mandela Bay C
EC121	Mbashe						

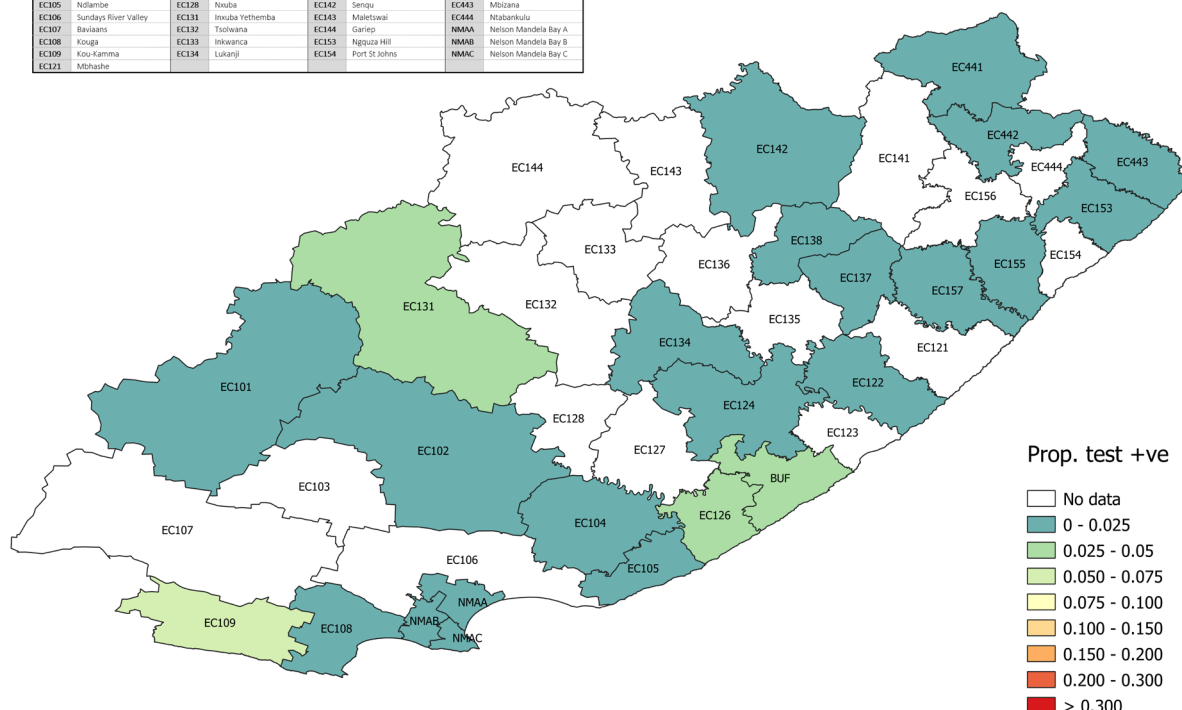


Figure 8. Proportion testing positive by health sub-district in the Eastern Cape Province for the week of 24-30 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

NC061	Richtersveld	NC074	Kareeberg	NC085	Tsantabane
NC062	Namaqualand	NC075	Renosterberg	NC086	Ngqonqweni
NC064	Kamiesberg	NC076	Thembelishu	NC091	Sol Plaatje
NC065	Namdam	NC077	Siyambila	NC092	Ekigatong
NC066	Karoo Hoogland	NC078	Siyancuma	NC093	Magareng
NC067	tsali-Ma	NC081	Moor	NC094	Prokware
NC071	Ukama	NC082	Kai Gardo	NC451	Joe Morong
NC072	Umsobomvu	NC083	Witara Hills	NC452	Ga-Segonyama
NC073	Emthangeni	NC084	Ikheila	NC453	Gamagara

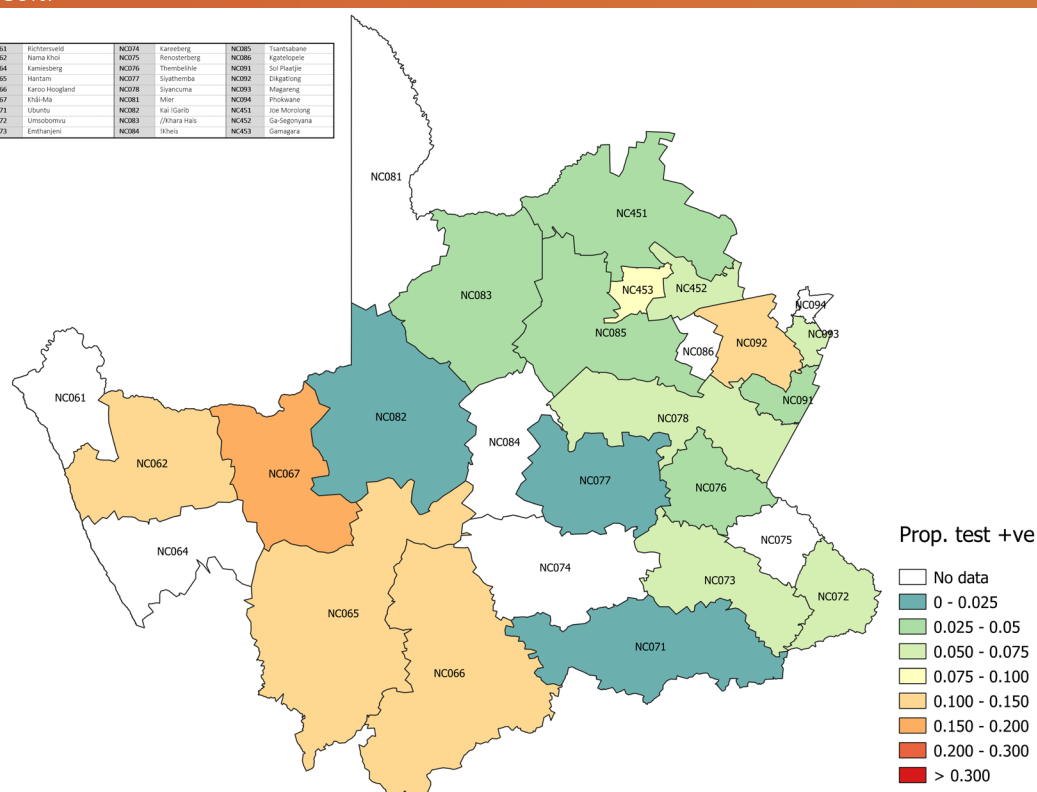


Figure 9. Proportion testing positive by health sub-district in Northern Cape Province for the week of 24-30 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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MAN	Mangaung	FS181	Masibong	FS191	Setsotho	FS196	Mantsoa
FS161	Letsemeng	FS182	Tokologo	FS192	Onibabeng	FS201	Mochaka
FS162	Kopanong	FS183	Tswelapele	FS193	Nketoana	FS203	Ngwathe
FS163	Mohokare	FS184	Matjhabeng	FS194	Maluti a Phofung	FS204	Metsimholo
FS164	Naledi	FS185	Nala	FS195	Phumelela	FS205	Mafube

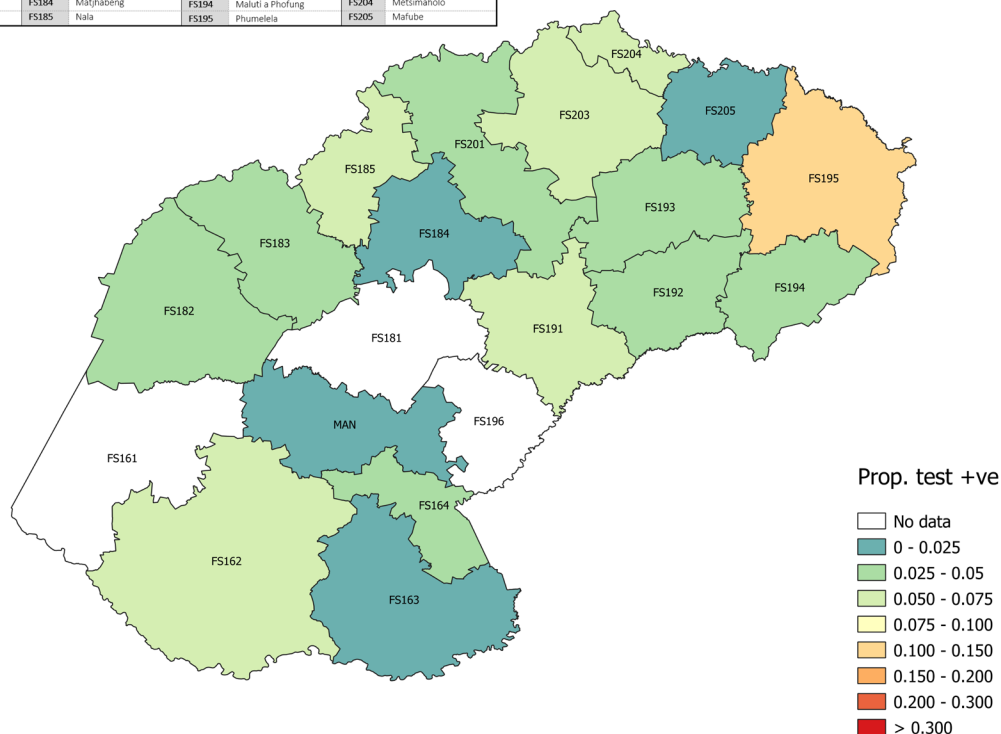


Figure 10. Proportion testing positive by health sub-district in Free State Province for the week of 24-30 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

ETHN	eThekweni North	KZN233	Indaka	KZN273	The Big 5 False Bay
ETHS	eThekweni South	KZN234	Umtshezi	KZN274	Hlabisa
ETHS	eThekweni South	KZN235	Okhahlamba	KZN275	Mtubatuba
ETHW	eThekweni West	KZN236	Imbabazane	KZN281	Mfotoli
KZN211	Vulamehlo	KZN241	Endumeni	KZN282	uMkhathuzwe
KZN212	Umdoni	KZN242	Nqutu	KZN283	Ntambanana
KZN213	Umkumbi	KZN244	Misinga	KZN284	uMlalazi
KZN214	uMuziwabantu	KZN245	Umvoti	KZN285	Mthonjaneni
KZN215	Ezingolweni	KZN252	Newcastle	KZN286	Nkandla
KZN216	Hlabisa Coast	KZN253	Emadlangeni	KZN291	Mandeni
KZN221	uMshwathi	KZN254	Damshauzer	KZN292	KwaDukuza
KZN222	uMngeni	KZN261	eDumbe	KZN293	Ndwedwe
KZN223	Mpofana	KZN262	uPhongolo	KZN294	Maphumulo
KZN224	Impendle	KZN263	Abaqulusi	KZN431	Ingwe
KZN225	The Maudslayi	KZN265	Nongoma	KZN432	Kwa Sani
KZN226	Mkhambathini	KZN266	Ulundi	KZN433	Greater Kokstad
KZN227	Richmond	KZN271	Umlahlaba/yalingana	KZN434	Ubuhlebezwe
KZN232	Emnambithi/Ladysmith	KZN272	Jozini	KZN435	Umkhulu

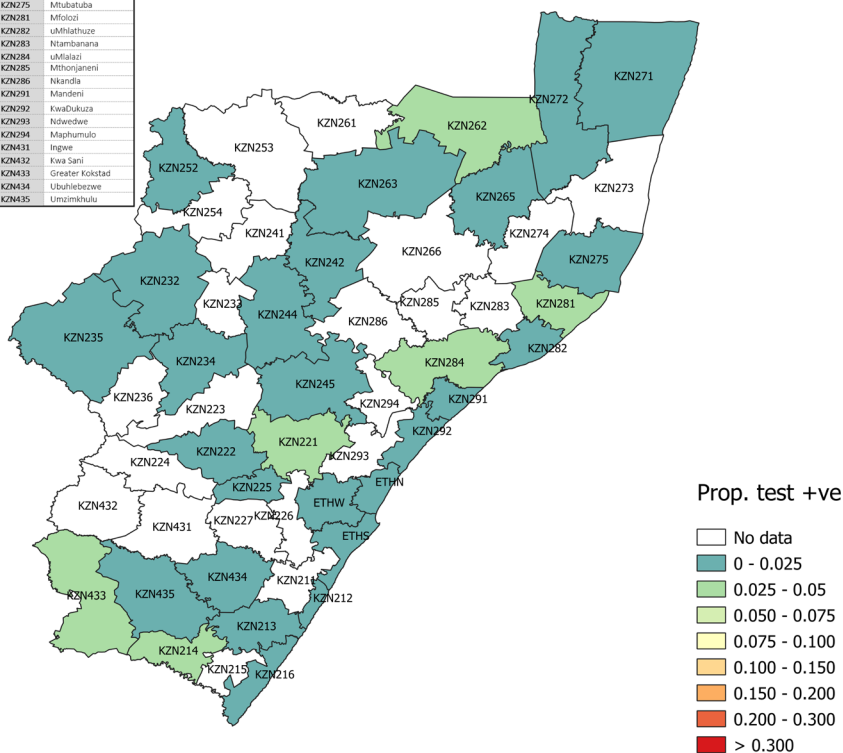


Figure 11. Proportion testing positive by health sub-district in KwaZulu-Natal Province for the week of 24-30 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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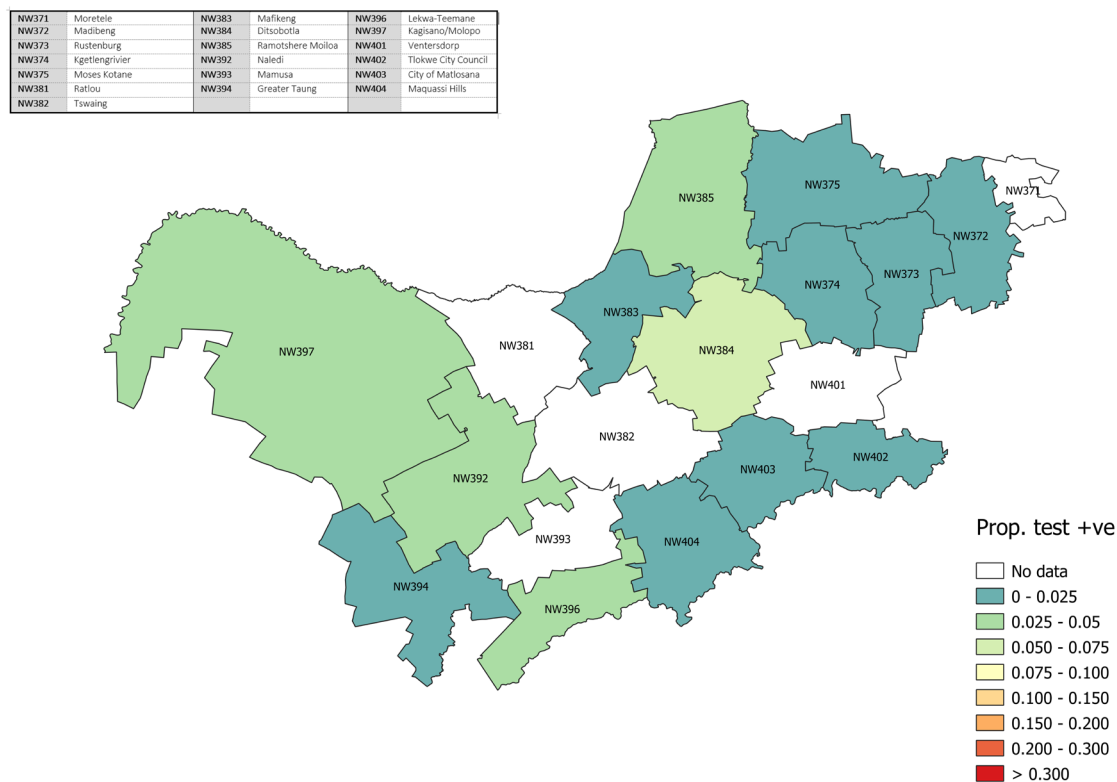


Figure 12. Proportion testing positive by health sub-district in North West Province for the week of 24-30 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

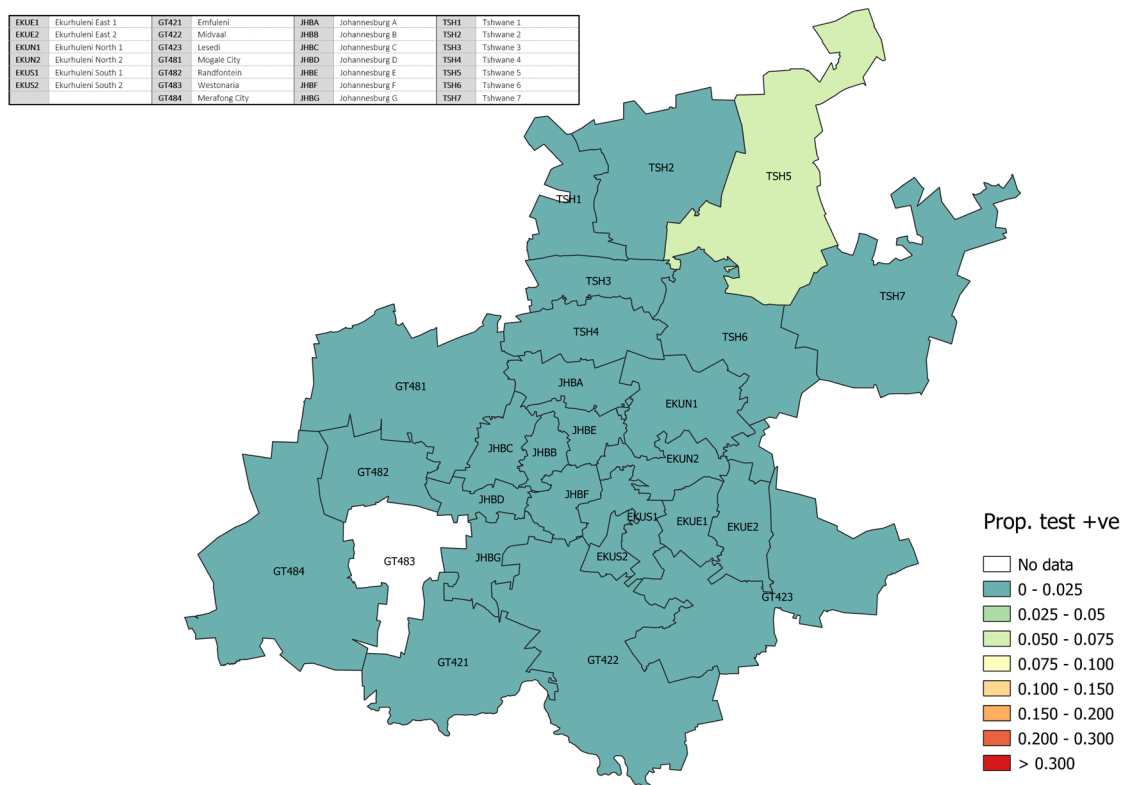


Figure 13. Proportion testing positive by health sub-district in Gauteng Province for the week of 24-30 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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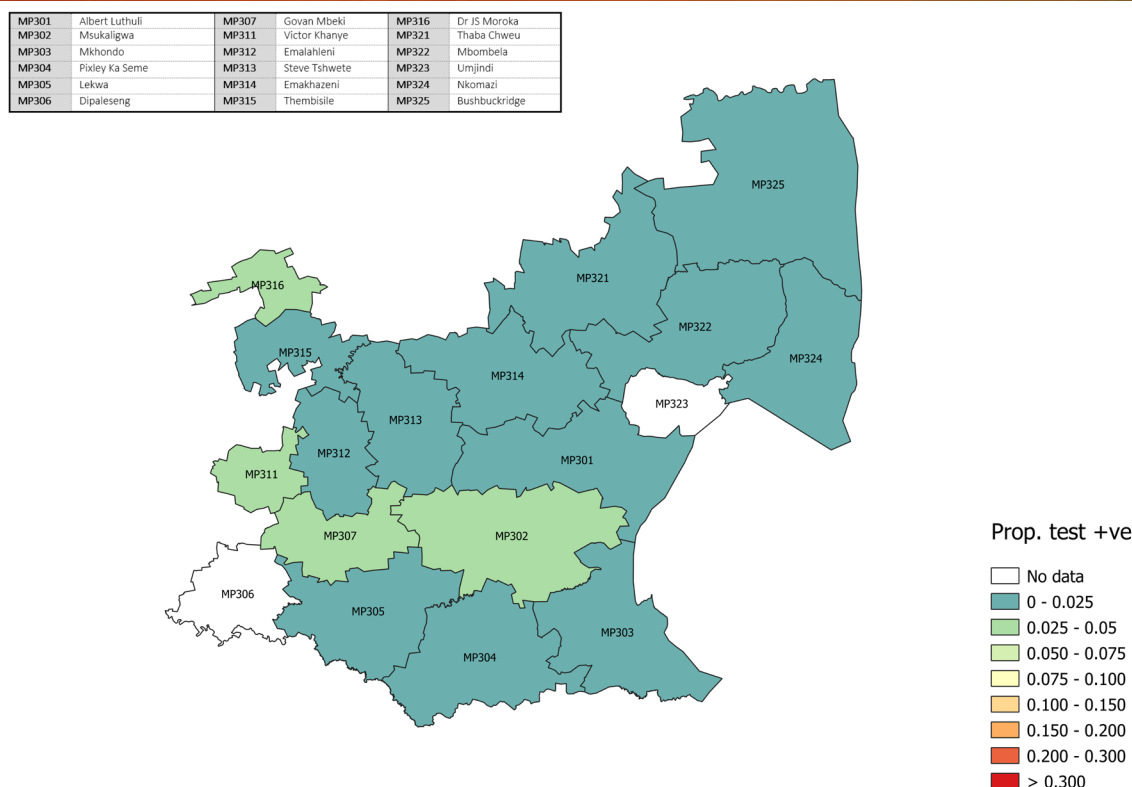


Figure 14. Proportion testing positive by health sub-district in Mpumalanga Province for the week of 24-30 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

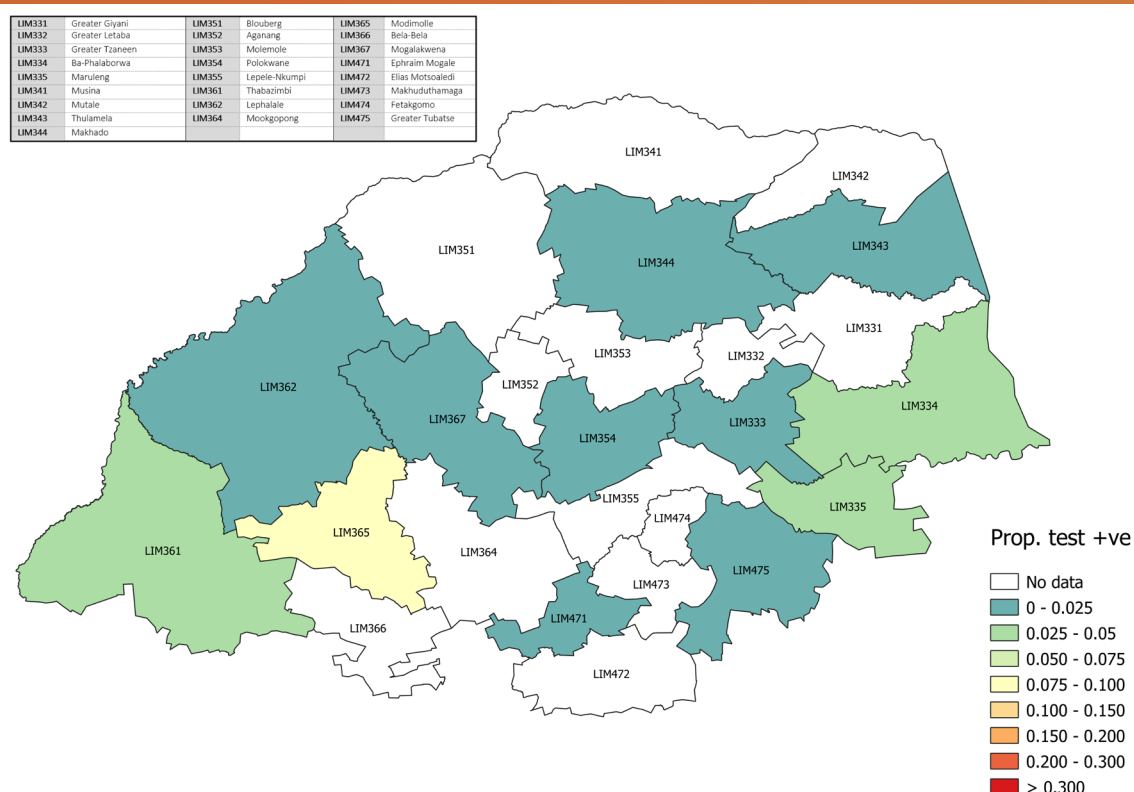


Figure 15. Proportion testing positive by health sub-district in Limpopo Province for the week of 24-30 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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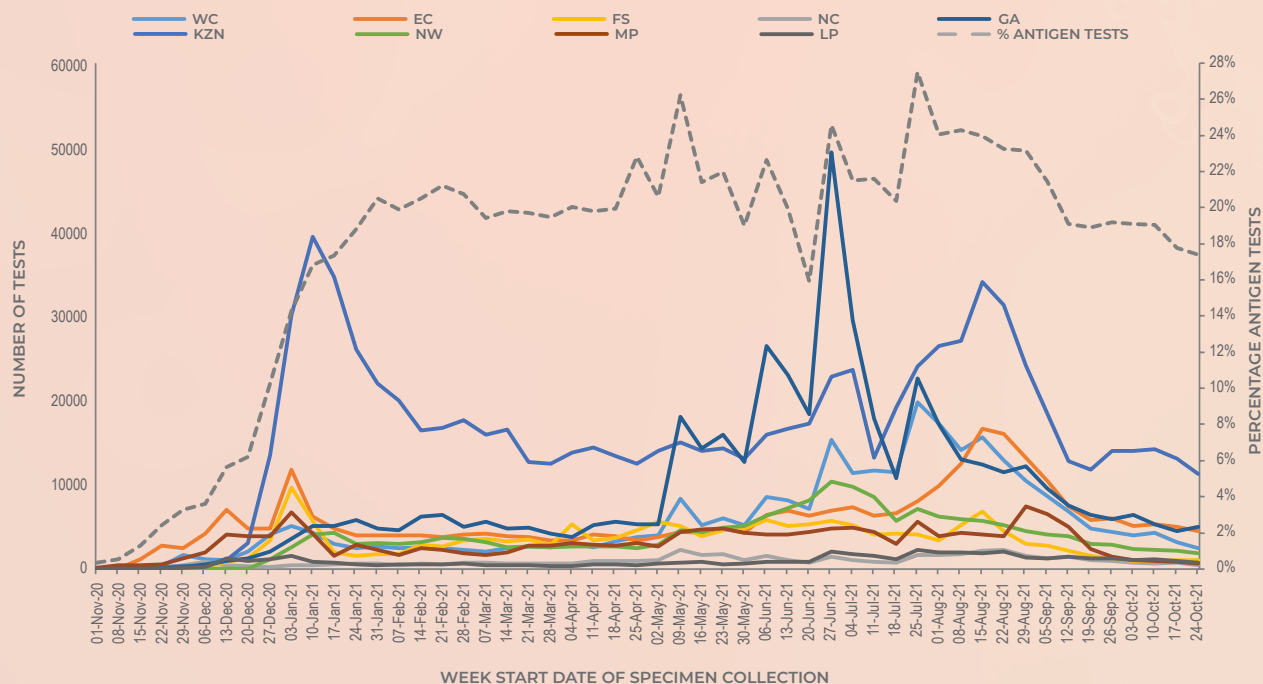


Figure 16. Number of antigen tests by province and overall percentage antigen tests, South Africa, 1 November 2020 – 30 October 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GA Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

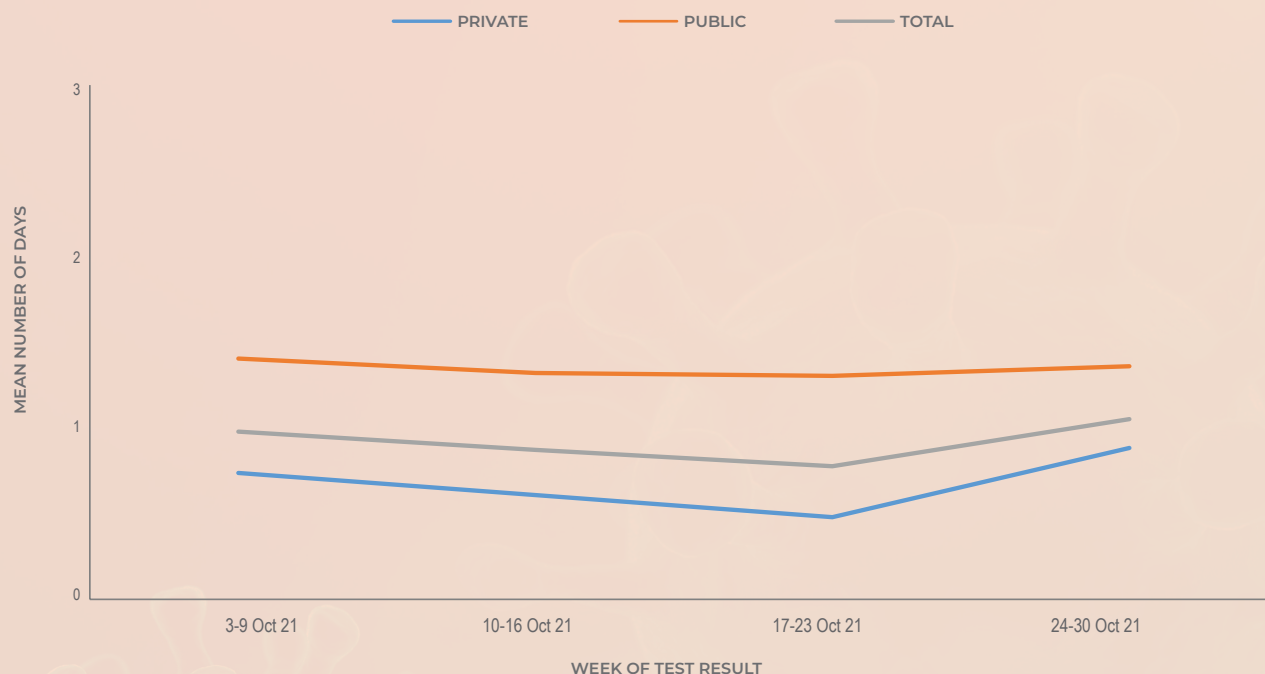


Figure 17. Mean number of days between date of specimen collection and date of test result for PCR tests by week of test result, South Africa, 3-30 October 2021

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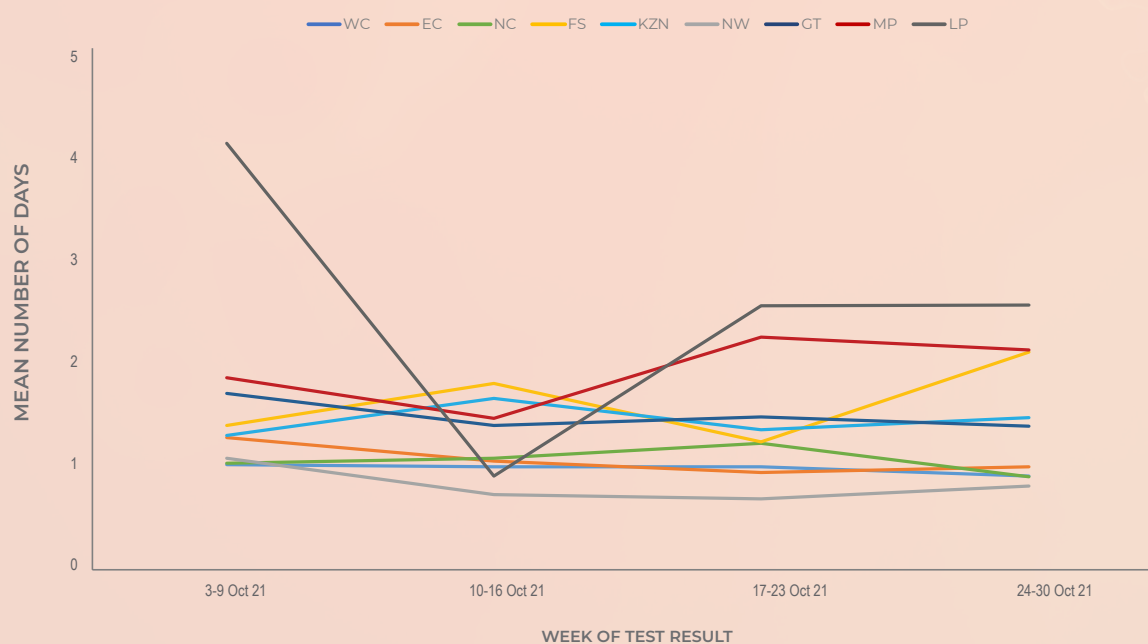


Figure 18. Mean number of days between date of specimen collection and date of test result for PCR tests in the public sector by week of test result and province, South Africa, 3-30 October 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GT Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

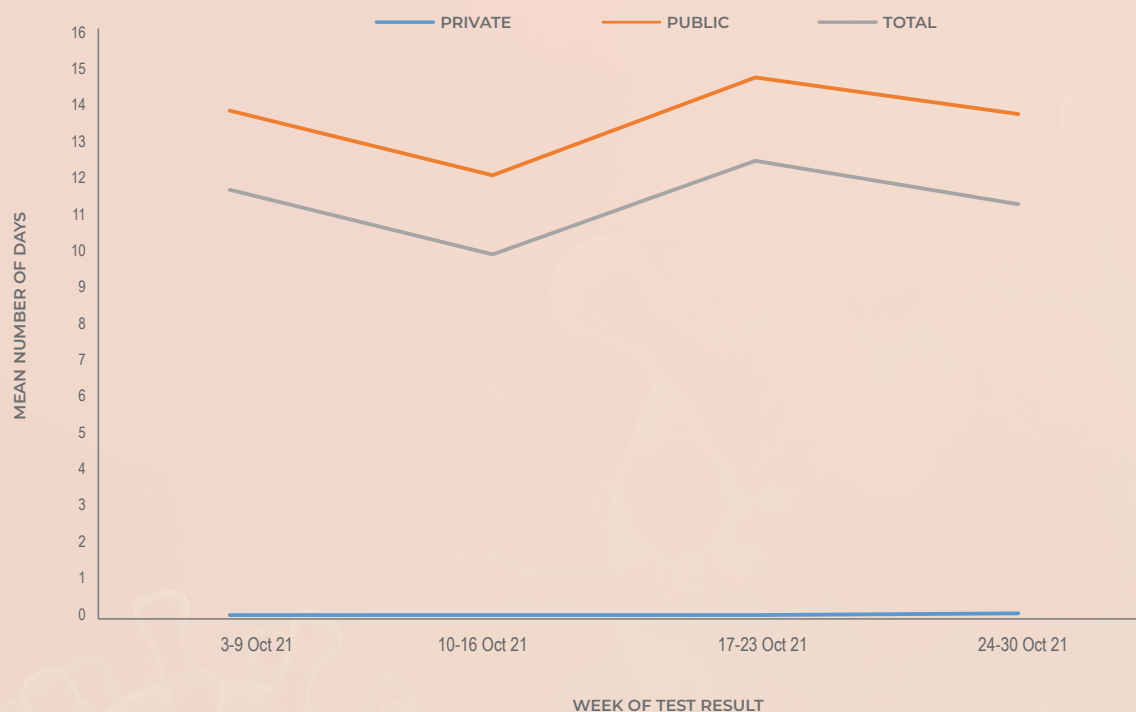


Figure 19. Mean number of days between date of specimen collection and date of test result for antigen tests by week of test result, South Africa, 3-30 October 2021

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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 84% 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.