

COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 42 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 23 October 2021 (Week 42 of 2021).

HIGHLIGHTS

- The weekly number of reported tests continued to decrease, and in week 42 of 2021, 173,184 tests were reported.
- In week 42 the testing rate was highest in the Western Cape (403 per 100,000 persons) and lowest in Limpopo (64 per 100,000 persons).
- In week 42 the percentage testing positive was 1.8%, which was the lowest it has ever reached since the start of the epidemic.
- In week 42 compared to the previous week, the percentage testing positive decreased in all provinces except in Mpumalanga and Limpopo provinces, where it remained unchanged.
- The percentage testing positive in week 42 was highest in the Northern Cape (5.7%) and was less than 5% in all other provinces.

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 42 2021

Executive Summary:

- In the period 1 March 2020 through 23 October 2021, 18,249,693 tests for SARS-CoV-2 have been reported nationally: 15,787,269 PCR and 2,462,424 antigen tests.
- The weekly number of reported tests continued to decrease and in week 42 it was 173,184 (145,197 PCR and 27,987 antigen) tests. Gauteng reported the largest proportion of tests (35.7%), followed by KwaZulu-Natal (19.7%) and Western Cape (16.3%).
- The overall testing rate decreased from 308 per 100,000 persons in week 41 to 290 per 100,000 persons in week 42.
- In week 42, the testing rate decreased slightly in the Western Cape and Eastern Cape and was similar to the previous week in all other provinces. The testing rate was highest in the Western Cape (403 per 100,000 persons) and lowest in Limpopo (64 per 100,000 persons).
- The testing rate in week 42 was highest in the ≥80 years age group (657 per 100,000 persons).
- In week 42 the percentage testing positive was 1.8%, which was 0.8% lower than the previous week (2.6%, $P < 0.001$), and the lowest ever reached since the start of the epidemic in the country.
- In the past week the percentage testing positive decreased by 0.9% in the public sector (3.5% in week 41 to 2.6% in week 42, $P < 0.001$) and by 0.7% in the private sector (1.9% in week 41 to 1.2% in week 42, $P < 0.001$).
- In week 42 compared to the previous week, the percentage testing positive remained unchanged in Mpumalanga and Limpopo provinces, and decreased in all other provinces.
- The percentage testing positive in week 42 was highest in the Northern Cape (5.7%) and was less than 5% in all other provinces.
- The percentage testing positive was highest in individuals aged 10-14 years (3.9%), followed by 15-19 years (3.7%).
- Health sub-districts showing the highest percentage testing positive were in the Northern Cape ($n=10$), with six in the Free State, and four in the Western Cape and three in North West.
- Antigen tests accounted for 16.2% (27,987/173,184) of tests reported in week 42, however the number of antigen tests is likely underestimated due to under-reporting and delayed reporting of antigen tests.
- In week 42 the public sector accounted for 77.2% of antigen tests reported. The majority of antigen tests have been reported from KwaZulu-Natal (33.2%) and Gauteng (18.8%) 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 42 was 0.8 days; 1.3 days in the public sector and 0.5 days in the private sector. Turnaround times for public sector PCR tests were >2 days in Mpumalanga (2.2 days) and Limpopo (2.5 days) provinces in the past week.
- The mean turnaround time for antigen tests reported in week 42 was 12.8 days in the public sector and 0.1 days in the private sector.

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 42 2021

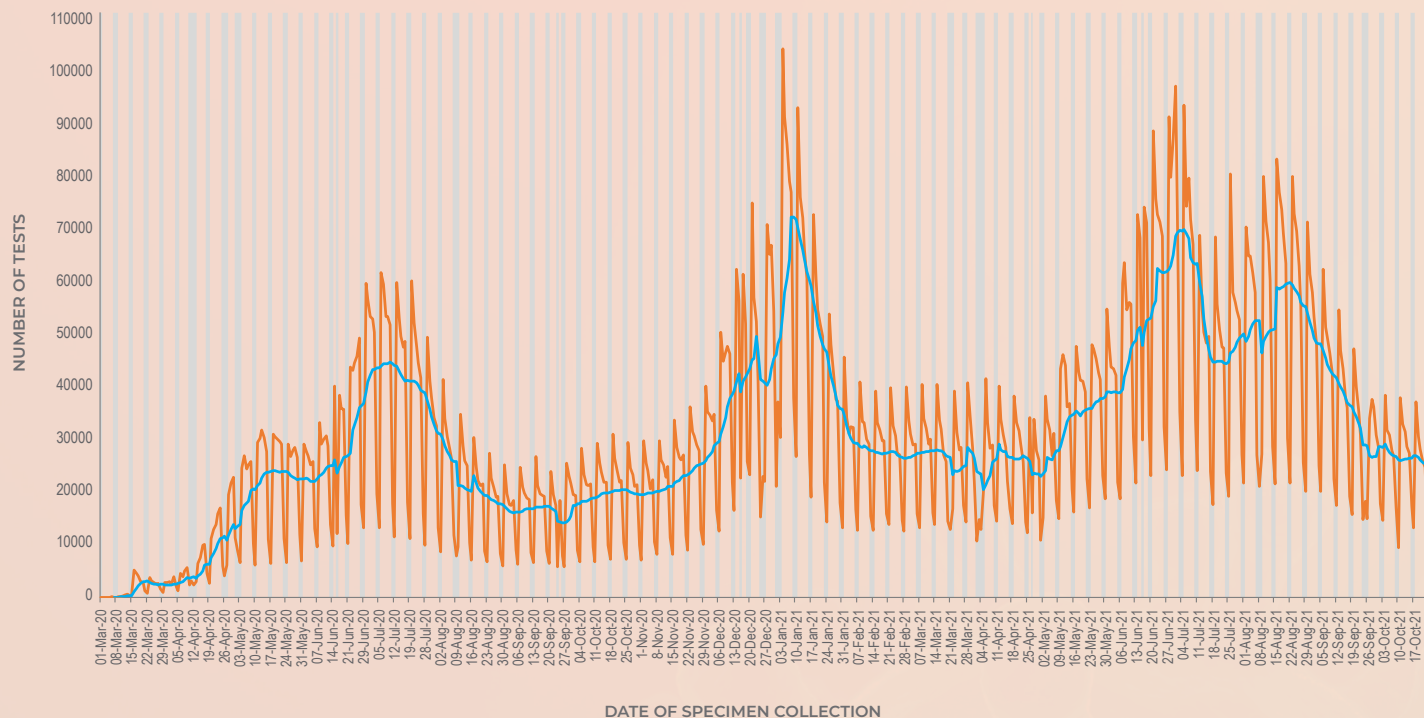


Figure 1. Number of SARS-CoV-2 tests reported by date of specimen collection, South Africa, 1 March 2020 – 23 October 2021. Blue line shows the 7-day moving average of the number of tests reported. Grey bars highlight weekend days and public holidays

COVID-19 TESTING SUMMARY

SOUTH AFRICA | WEEK 42 2021

Table 1. Weekly number of SARS-CoV-2 tests and positive tests reported, South Africa, 3 January – 23 October 2021

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
1	03-Jan-21	501262 (2.7)	151039	30.1
2	10-Jan-21	418021 (2.3)	104799	25.1
3	17-Jan-21	327450 (1.8)	63264	19.3
4	24-Jan-21	249514 (1.4)	34639	13.9
5	31-Jan-21	203655 (1.1)	22361	11.0
6	07-Feb-21	193297 (1.1)	16470	8.5
7	14-Feb-21	190645 (1.0)	12184	6.4
8	21-Feb-21	184677 (1.0)	10384	5.6
9	28-Feb-21	189687 (1.0)	8687	4.6
10	07-Mar-21	193394 (1.1)	8325	4.3
11	14-Mar-21	185502 (1.0)	8152	4.4
12	21-Mar-21	173007 (0.9)	7351	4.2
13	28-Mar-21	163932 (0.9)	7060	4.3
14	04-Apr-21	180834 (1.0)	7290	4.0
15	11-Apr-21	185174 (1.0)	8844	4.8
16	18-Apr-21	184858 (1.0)	9467	5.1
17	25-Apr-21	159987 (0.9)	9180	5.7
18	02-May-21	193892 (1.1)	13452	6.9
19	09-May-21	239951 (1.3)	19929	8.3
20	16-May-21	248437 (1.4)	24207	9.7
21	23-May-21	262335 (1.4)	29712	11.3
22	30-May-21	269918 (1.5)	35969	13.3
23	06-Jun-21	335735 (1.8)	58857	17.5
24	13-Jun-21	366410 (2.0)	86652	23.6
25	20-Jun-21	428448 (2.3)	116697	27.2
26	27-Jun-21	483593 (2.6)	143809	29.7
27	04-Jul-21	438994 (2.4)	139331	31.7
28	11-Jul-21	316816 (1.7)	99291	31.3
29	18-Jul-21	308465 (1.7)	86803	28.1
30	25-Jul-21	344638 (1.9)	86805	25.2
31	01-Aug-21	365141 (2.0)	86447	23.7
32	08-Aug-21	352887 (1.9)	81880	23.2
33	15-Aug-21	414270 (2.3)	93788	22.6
34	22-Aug-21	384651 (2.1)	76890	20.0
35	29-Aug-21	334019 (1.8)	53851	16.1
36	05-Sep-21	292209 (1.6)	37863	13.0
37	12-Sep-21	253377 (1.4)	23409	9.2
38	19-Sep-21	200552 (1.1)	13668	6.8
39	26-Sep-21	198335 (1.1)	9213	4.6
40	03-Oct-21	185967 (1.0)	6184	3.3
41	10-Oct-21	183715 (1.0)	4837	2.6
42	17-Oct-21	173184 (0.9)	3128	1.8
Total		18,249,693 (100.0)	3,107,082	

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 42 2021

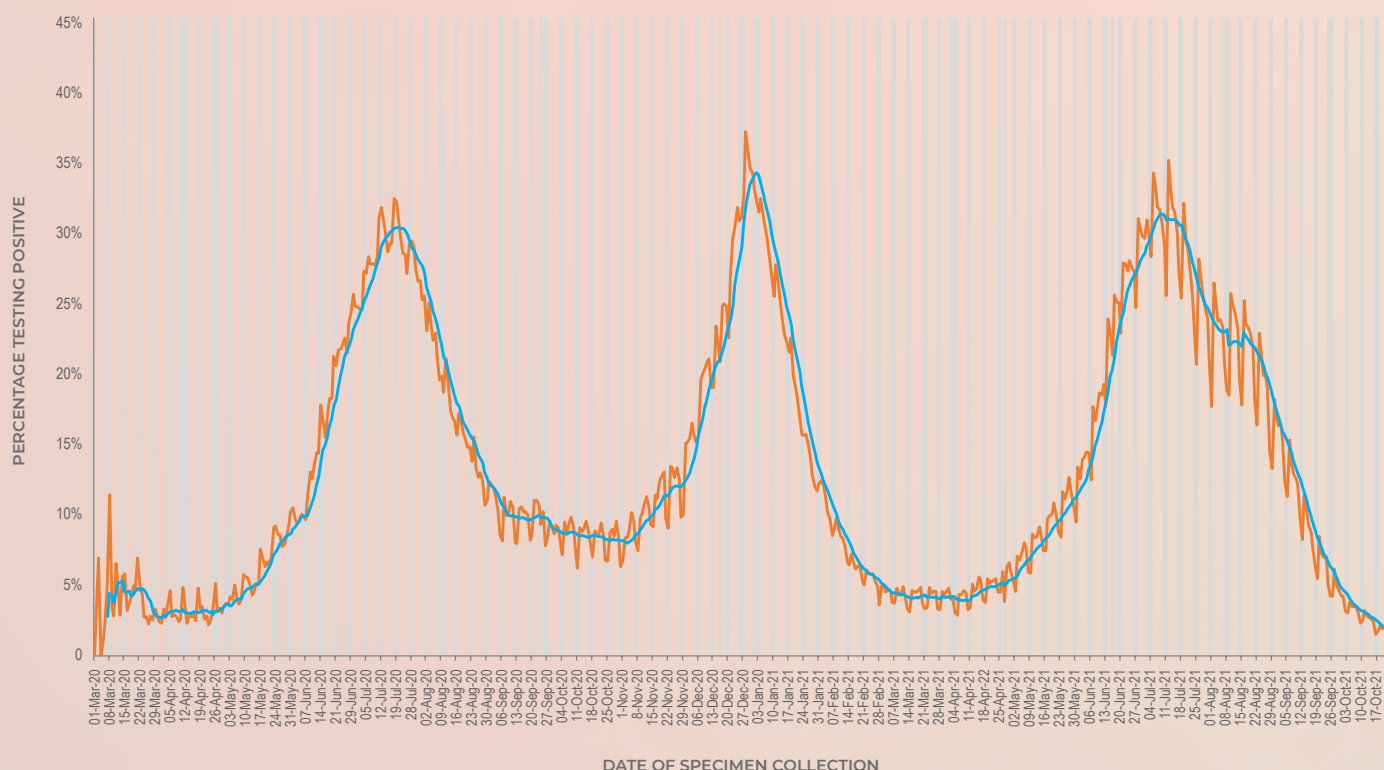


Figure 2. Percentage of tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March 2020 – 23 October 2021. Blue line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

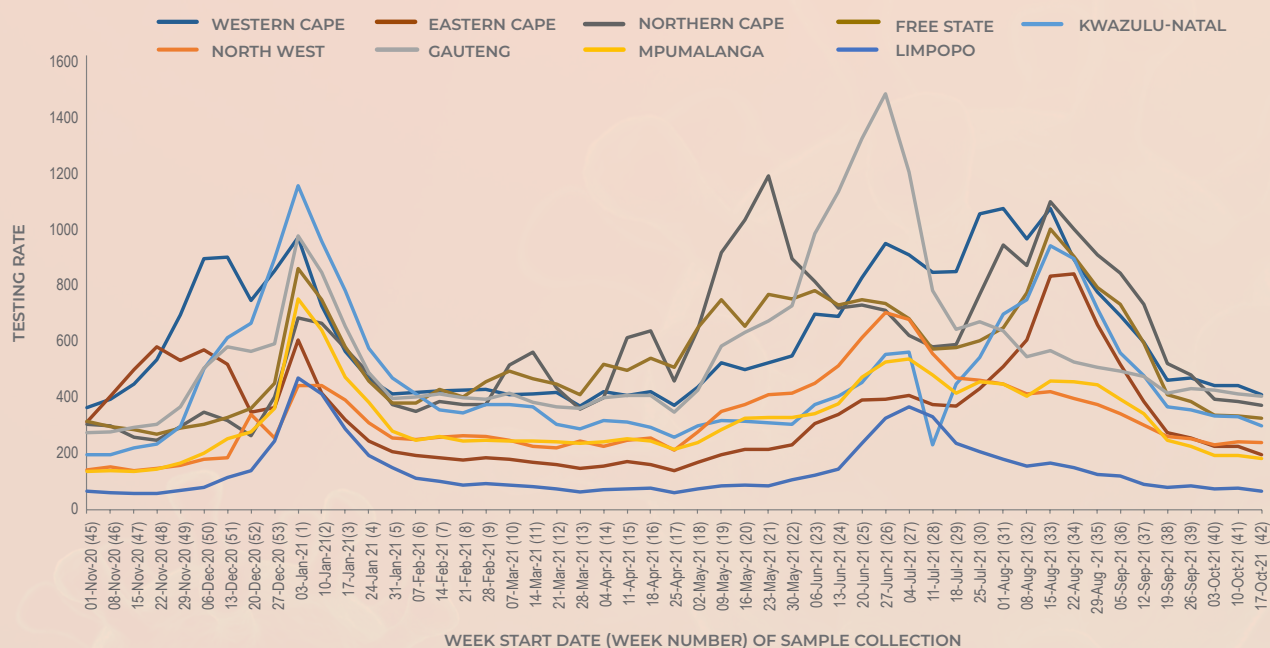


Figure 3. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 November 2020 – 23 October 2021

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 42 2021

Table 2. Weekly number of tests and positive tests reported by province, South Africa, 3-23 October 2021

Province	Population ^a	3-9 Oct 2021		10-16 Oct 2021		17-23 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	30606	1260 (4.1)	30606	1040 (3.4)	28249	627 (2.2)	403	-1.2%
Eastern Cape	6734001	15038	698 (4.6)	14879	452 (3.0)	12936	222 (1.7)	192	-1.3%
Northern Cape	1292786	5007	528 (10.5)	4925	432 (8.8)	4758	272 (5.7)	368	-3.1%
Free State	2928903	9709	644 (6.6)	9637	533 (5.5)	9384	357 (3.8)	320	-1.7%
KwaZulu-Natal	11531628	37826	1173 (3.1)	37603	920 (2.4)	34094	617 (1.8)	296	-0.6%
North West	4108816	9377	324 (3.5)	9776	304 (3.1)	9657	237 (2.5)	235	-0.7%
Gauteng	15488137	65273	1150 (1.8)	62996	839 (1.3)	61864	540 (0.9)	399	-0.5%
Mpumalanga	4679786	8956	330 (3.7)	8943	250 (2.8)	8458	198 (2.3)	181	-0.5%
Limpopo	5852553	4169	77 (1.8)	4329	67 (1.5)	3736	54 (1.4)	64	-0.1%
Unknown		6	0 (0.0)	21	0 (0.0)	48	4 (8.3)		
Total	59622350	185967	6184 (3.3)	183715	4837 (2.6)	173184	3128 (1.8)	290	-0.8%

^a 2020 Mid-year population Statistics SA

^b Current week compared to previous week

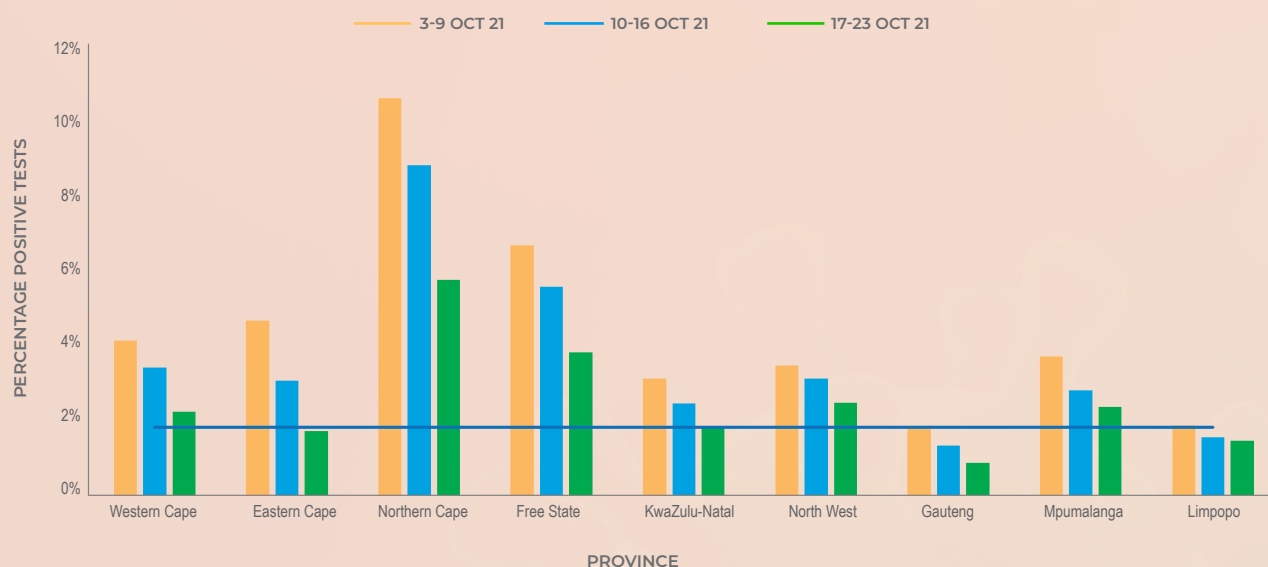


Figure 4. Weekly percentage testing positive by province, South Africa, 3-23 October 2021. The horizontal blue line shows the national mean for week 42, beginning 17 October 2021

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 42 2021

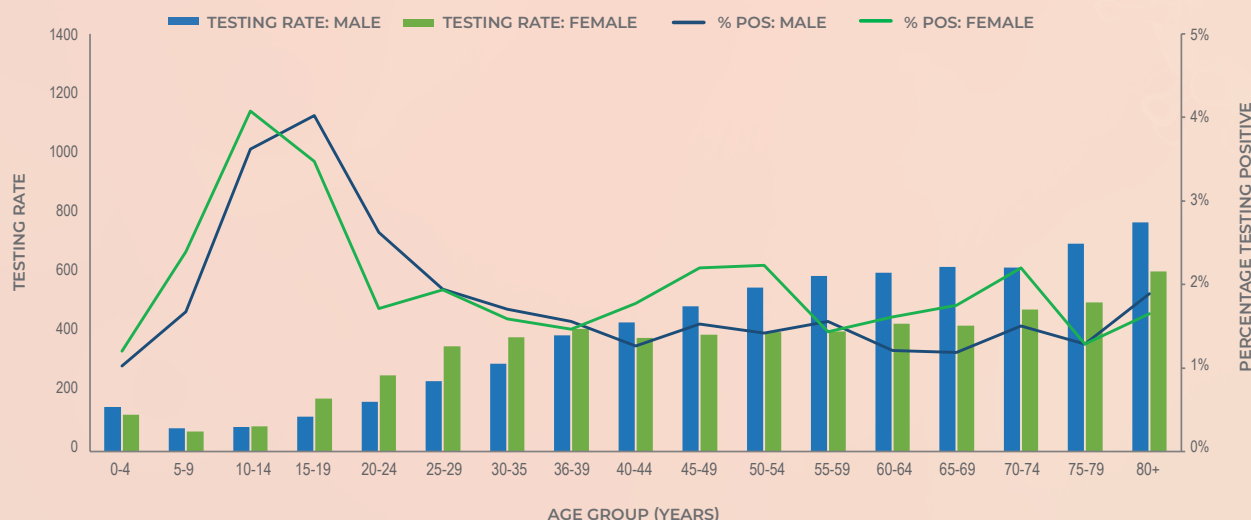


Figure 5. Testing rates per 100,000 persons and percentage testing positive by age group and sex, South Africa, week 42, 17-23 October 2021

Table 3. Health sub-districts with the highest proportion testing positive based on public and private sector data for the week of 17-23 October 2021

Health district or sub-district	Province	PTP (95% CI)	Previous week
Baviaans	Eastern Cape	0.176 (0.063-0.288)	0.118 (0.027-0.210)
Khâi-Ma	Northern Cape	0.171 (0.055-0.288)	0.260 (0.125-0.395)
Siyancoma	Northern Cape	0.157 (0.089-0.224)	0.187 (0.114-0.261)
Umsobomvu	Northern Cape	0.143 (0.026-0.260)	0.033 (0.000-0.078)
Hantam	Northern Cape	0.136 (0.075-0.197)	0.152 (0.099-0.206)
Cape Agulhas	Western Cape	0.120 (0.021-0.220)	0.096 (0.023-0.170)
Moqhaka	Free State	0.116 (0.085-0.146)	0.072 (0.046-0.098)
Tsantsabane	Northern Cape	0.113 (0.057-0.170)	0.139 (0.077-0.201)
Kareeberg	Northern Cape	0.111 (0.017-0.204)	...
Letsemeng	Free State	0.107 (0.006-0.208)	0.228 (0.133-0.323)
Theewaterskloof	Western Cape	0.103 (0.053-0.153)	0.072 (0.026-0.117)
Ca-Segonyana	Northern Cape	0.101 (0.055-0.147)	0.141 (0.091-0.191)
Mantsopa	Free State	0.098 (0.045-0.152)	0.073 (0.016-0.130)
Nama Khoi	Northern Cape	0.092 (0.056-0.128)	0.090 (0.058-0.121)
Karoo Hoogland	Northern Cape	0.084 (0.033-0.135)	0.242 (0.169-0.315)
Naledi	North West	0.080 (0.049-0.110)	0.124 (0.000-0.258)
Ventersdorp	North West	0.076 (0.000-0.178)	0.081 (0.000-0.189)
Mtubatuba	KwaZulu-Natal	0.075 (0.004-0.146)	0.045 (0.002-0.088)
Swellendam	Western Cape	0.074 (0.027-0.120)	0.039 (0.008-0.069)
Maluti a Phofung	Free State	0.071 (0.049-0.093)	0.098 (0.070-0.126)
Ramotshere Moiloa	North West	0.069 (0.025-0.113)	0.080 (0.036-0.123)
Setsoto	Free State	0.068 (0.027-0.109)	0.130 (0.081-0.179)
Emthanjeni	Northern Cape	0.068 (0.038-0.097)	0.088 (0.050-0.127)
Naledi	Free State	0.067 (0.000-0.141)	0.124 (0.000-0.258)
Matzikama	Western Cape	0.067 (0.027-0.107)	0.035 (0.010-0.061)

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.

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 42 2021

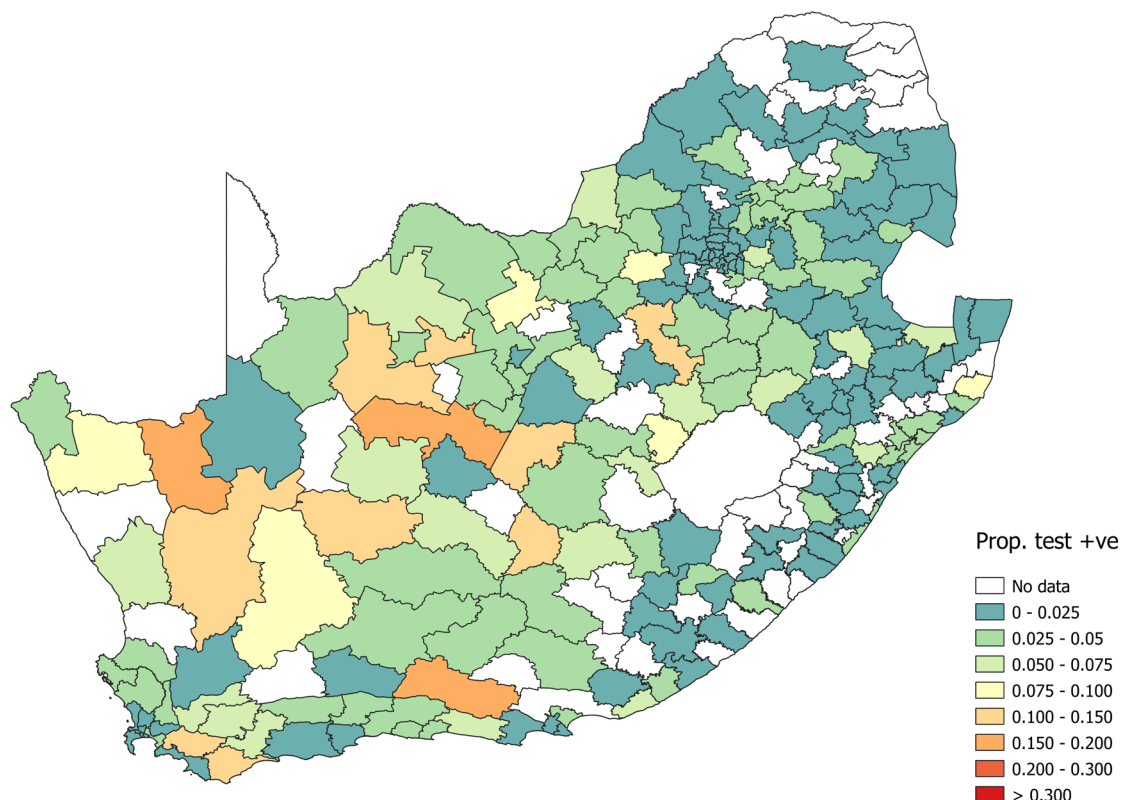


Figure 6. Proportion testing positive by health sub-district in South Africa for the week of 17-23 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

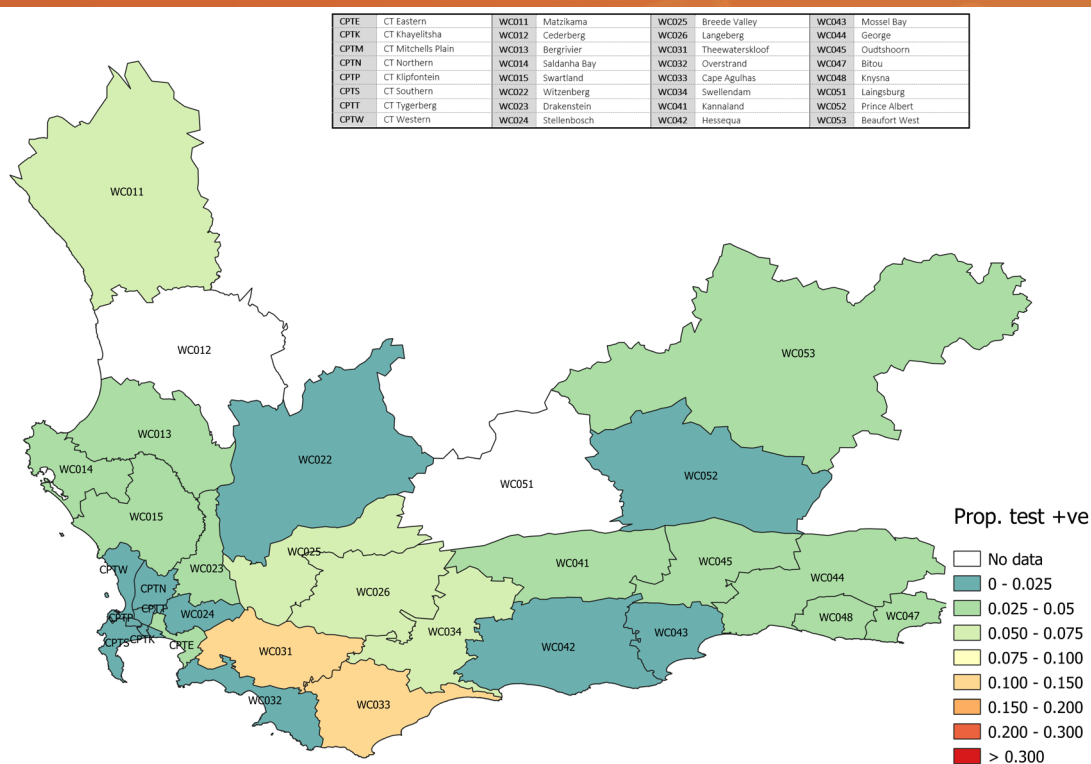


Figure 7. Proportion testing positive by health sub-district in the Western Cape Province for the week of 17-23 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 42 2021

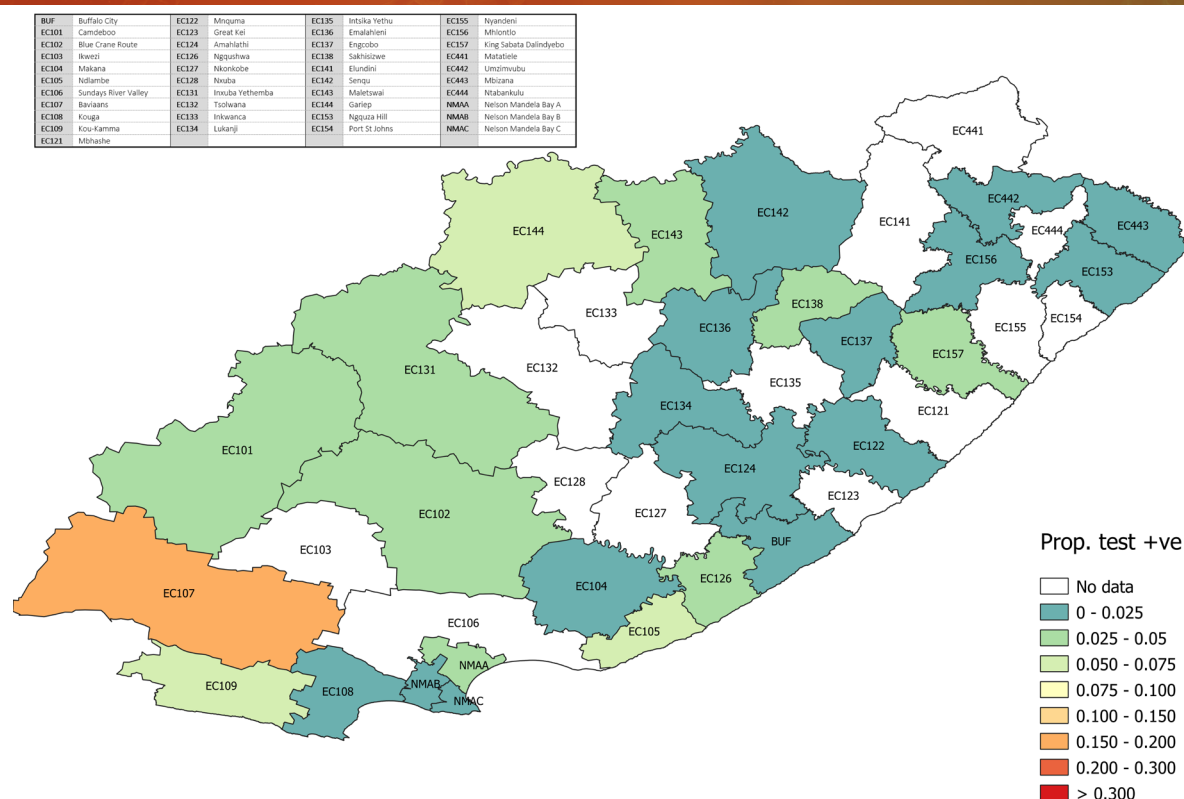


Figure 8. Proportion testing positive by health sub-district in the Eastern Cape Province for the week of 17-23 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

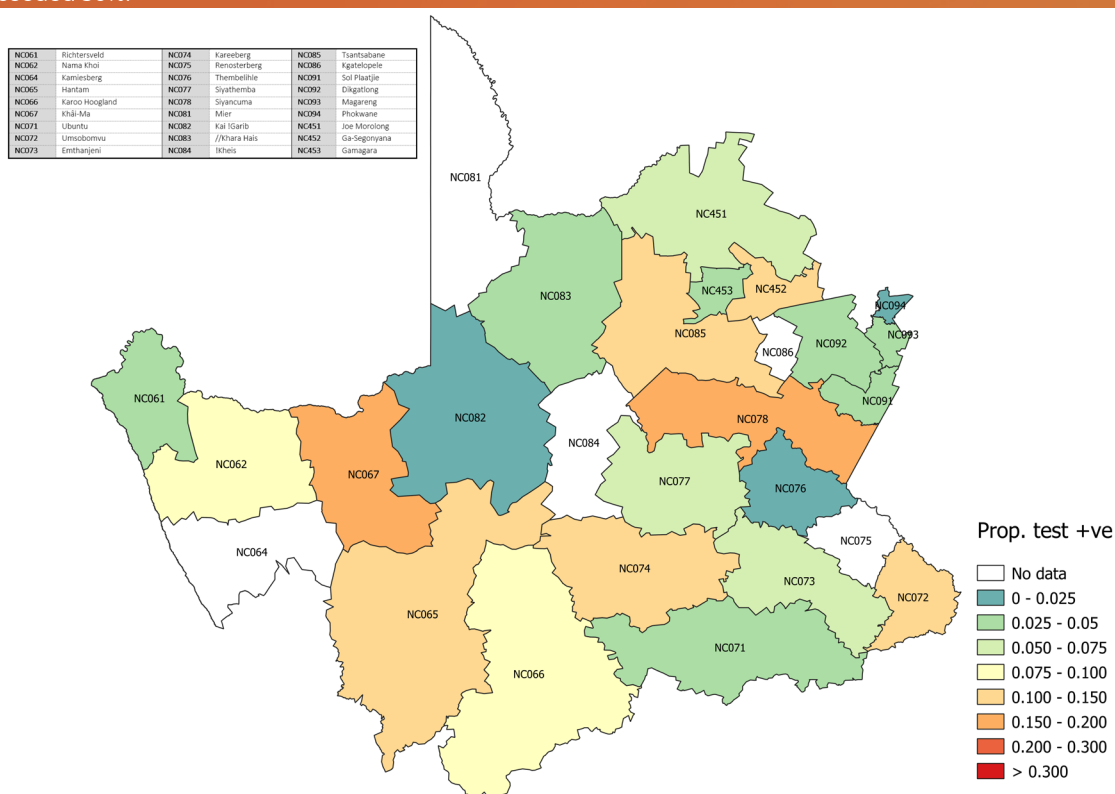


Figure 9. Proportion testing positive by health sub-district in Northern Cape Province for the week of 17-23 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 42 2021

MAN	Mangaung	FS181	Masilonyana	FS191	Setsotho	FS196	Mantsope
FS161	Letsemeng	FS182	Tokologo	FS192	Ditlabeng	FS201	Moghaka
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

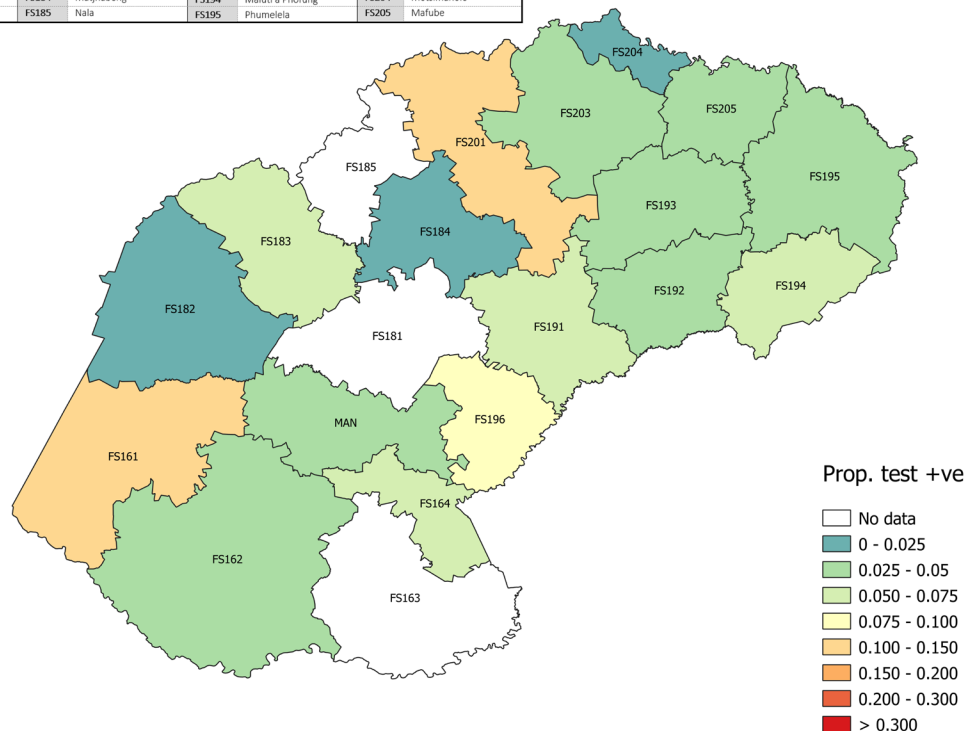


Figure 10. Proportion testing positive by health sub-district in Free State Province for the week of 17-23 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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	Mfolozi
KZN211	Vulamehlo	KZN241	Endumeni	KZN282	uMhlathuze
KZN212	Umdoni	KZN242	Nqutu	KZN283	Ntambanana
KZN213	Umkhumbi	KZN244	Mzinga	KZN284	uMlalazi
KZN214	uMuziwabantu	KZN245	Umvoti	KZN285	Mthonjaneni
KZN215	Ezingolweni	KZN252	Newcastle	KZN286	Nkandla
KZN216	Hibiscus Coast	KZN253	Emadlangeni	KZN291	Mandeni
KZN221	uMshwathi	KZN254	Dannhauser	KZN292	KwaDukuza
KZN222	uMngeni	KZN261	eDumbe	KZN293	Nolwede
KZN223	Mporofana	KZN262	uPhongolo	KZN294	Maphumulo
KZN224	Impendle	KZN263	Abaqulusi	KZN431	Ingwe
KZN225	The Msunduzi	KZN265	Nongoma	KZN432	Kwa Sanj
KZN226	Mkhambathini	KZN266	Ulundi	KZN433	Greater Kokstad
KZN227	Richmond	KZN271	Umkhambathini	KZN434	Ubuhlebezwe
KZN232	Emnambithi/Ladysmith	KZN272	Jozini	KZN435	Umkhambathini

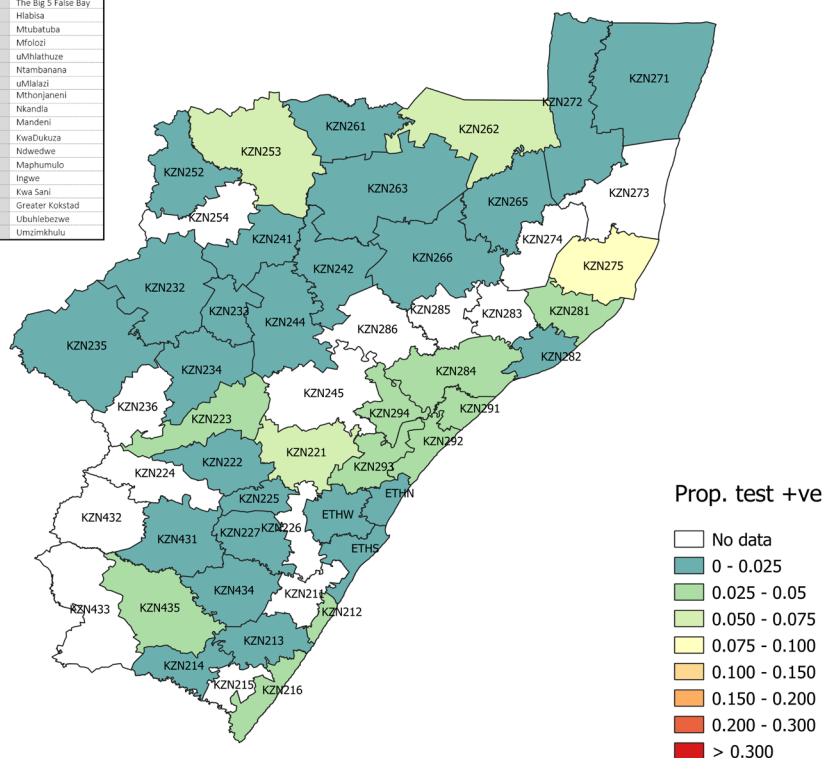


Figure 11. Proportion testing positive by health sub-district in KwaZulu-Natal Province for the week of 17-23 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 42 2021

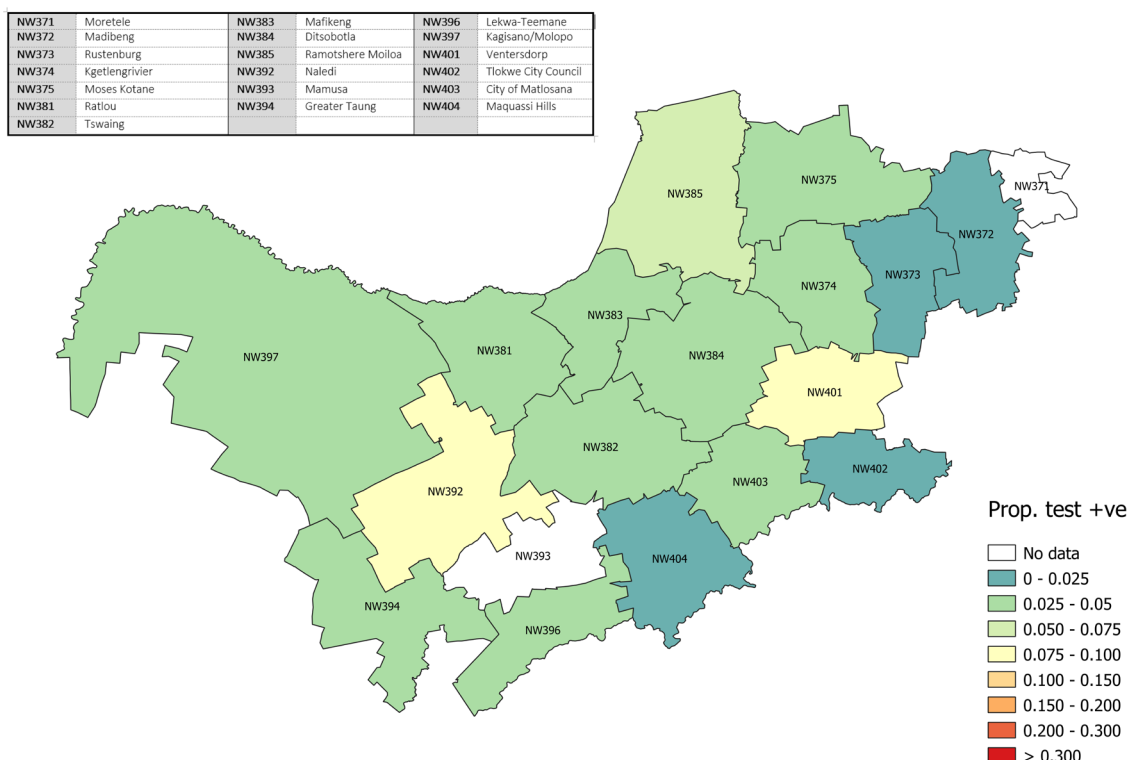


Figure 12. Proportion testing positive by health sub-district in North West Province for the week of 17-23 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

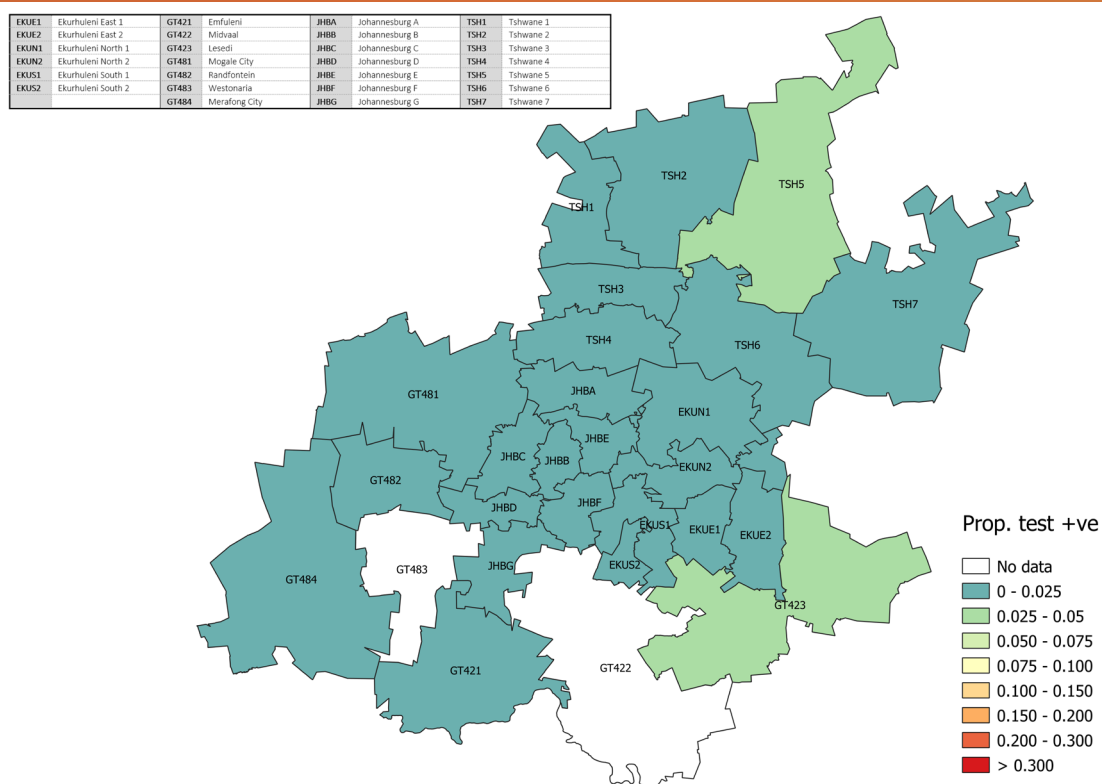


Figure 13. Proportion testing positive by health sub-district in Gauteng Province for the week of 17-23 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 42 2021

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

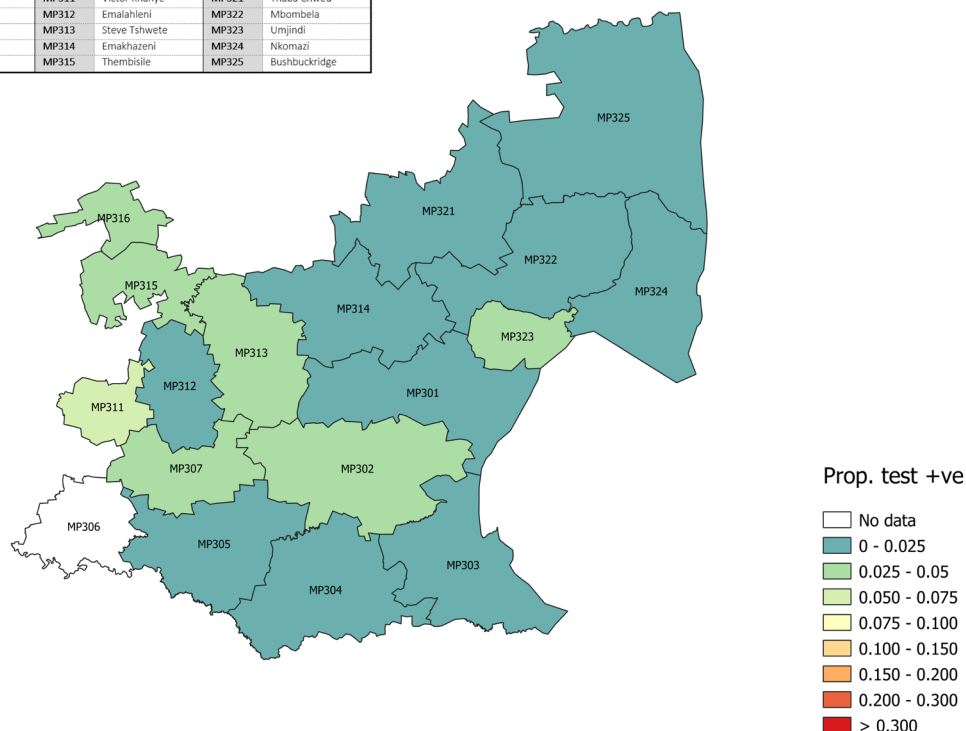


Figure 14. Proportion testing positive by health sub-district in Mpumalanga Province for the week of 17-23 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

LIM331	Greater Giyani	LIM351	Bloubaerg	LIM365	Modimolle
LIM332	Greater Letaba	LIM352	Aganang	LIM366	Bela-Bela
LIM333	Greater Tzaneen	LIM353	Molemoie	LIM367	Mogalakwena
LIM334	Ba-Phealaborwa	LIM354	Polokwane	LIM471	Ephraim Mogale
LIM335	Maruleng	LIM355	Lepele-Nkumpi	LIM472	Elias Motosoaledi
LIM341	Musina	LIM361	Thabazimbi	LIM473	Makhuduthamaga
LIM342	Mutale	LIM362	Lephalale	LIM474	Fetakgomo
LIM343	Thulamela	LIM364	Modikgopong	LIM475	Greater Tubatse
LIM344	Makhado				

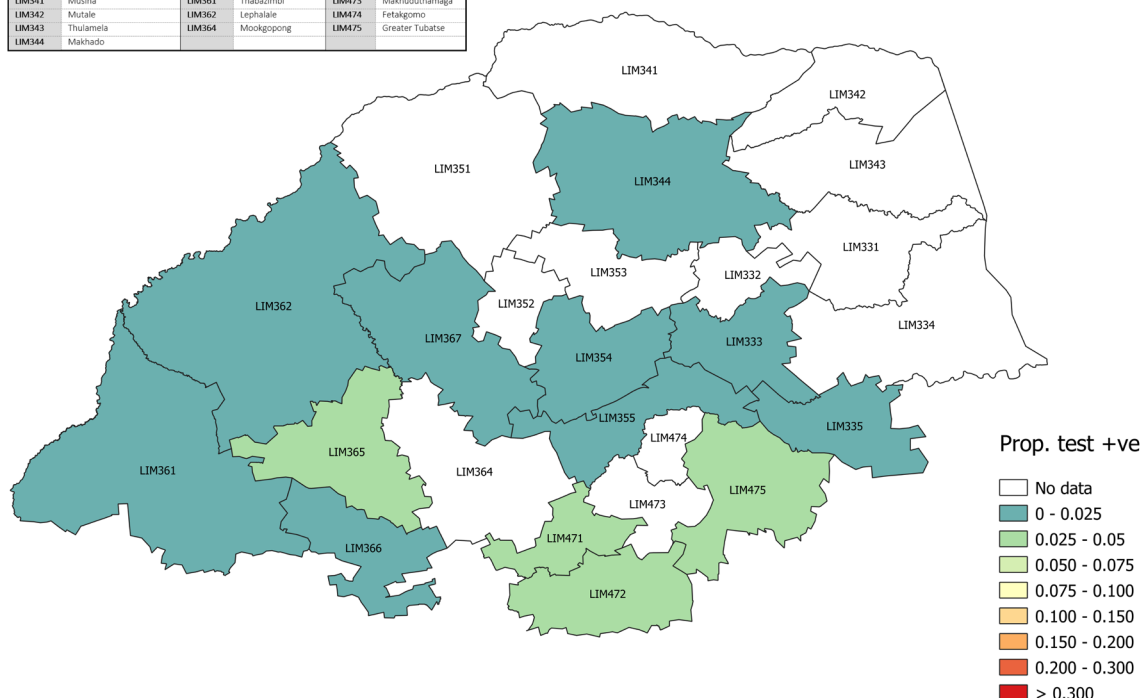


Figure 15. Proportion testing positive by health sub-district in Limpopo Province for the week of 17-23 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 42 2021

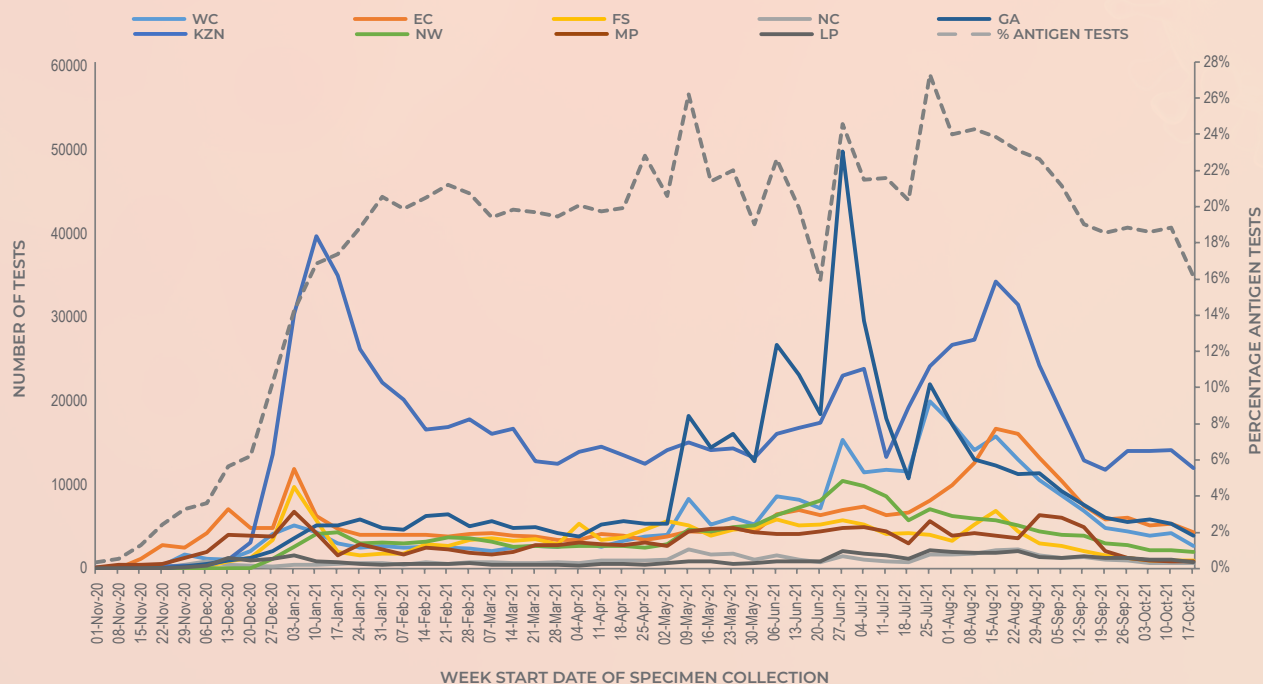


Figure 16. Number of antigen tests by province and overall percentage antigen tests, South Africa, 1 November 2020 – 23 October 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GA Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

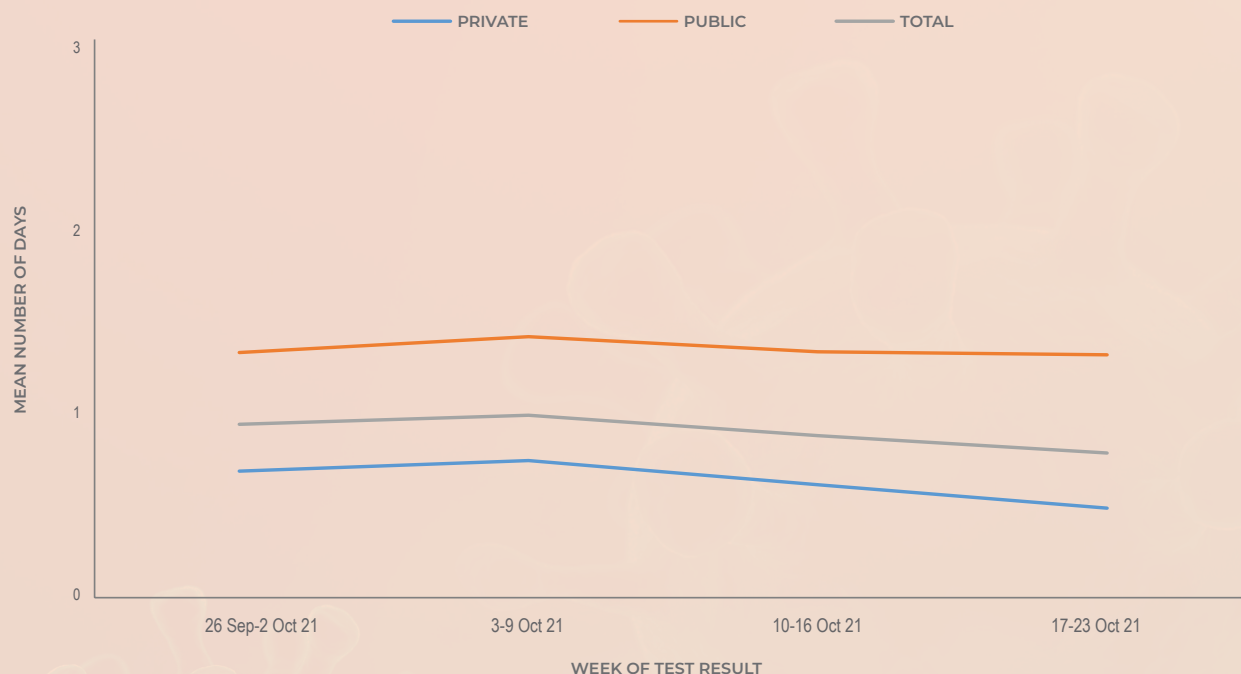


Figure 17. Mean number of days between date of specimen collection and date of test result for PCR tests by week of test result, South Africa, 26 September – 23 October 2021

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 42 2021

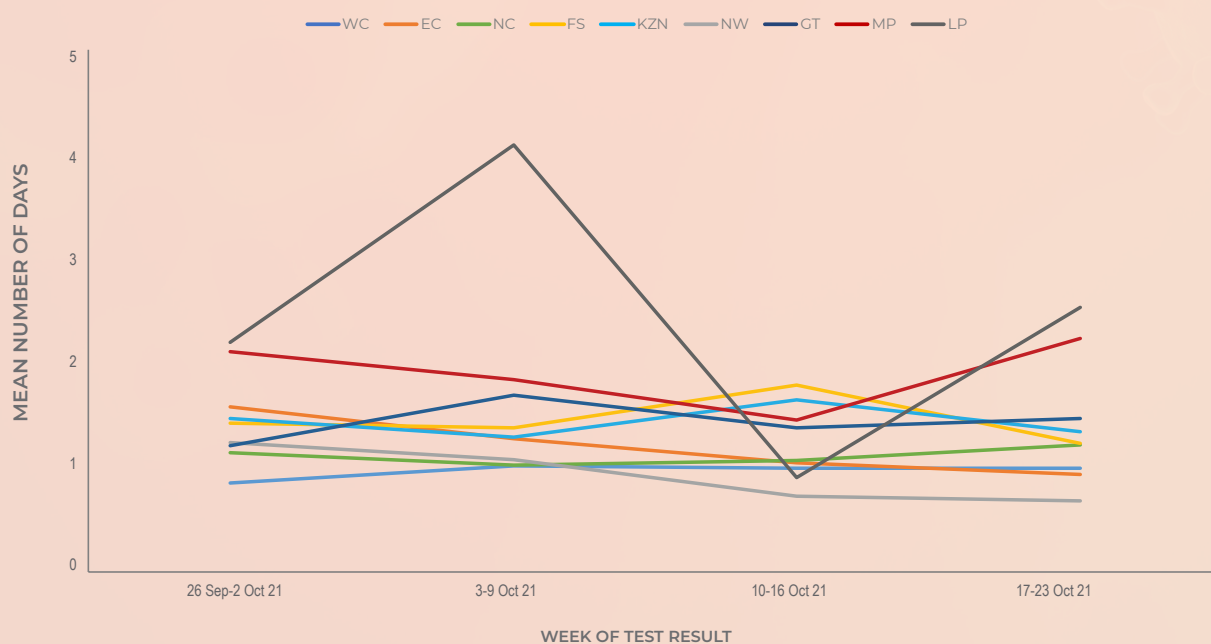


Figure 18. Mean number of days between date of specimen collection and date of test result for PCR tests in the public sector by week of test result and province, South Africa, 26 September – 23 October 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GT Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

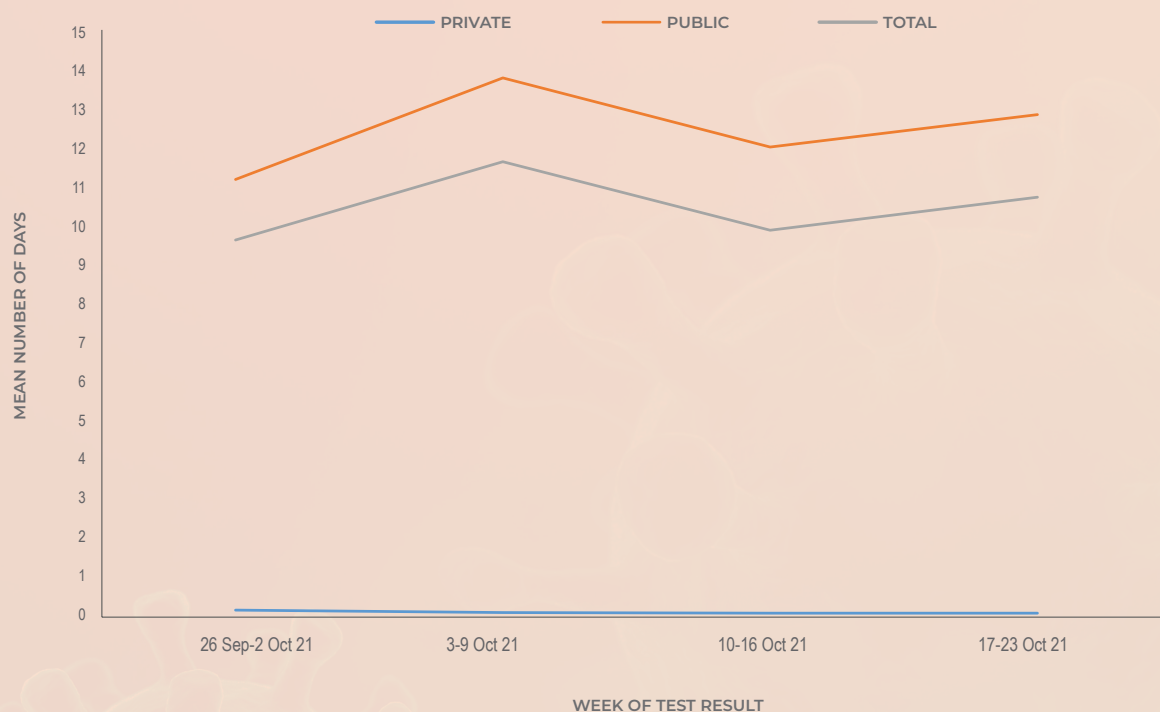


Figure 19. Mean number of days between date of specimen collection and date of test result for antigen tests by week of test result, South Africa, 26 September – 23 October 2021

COVID-19 TESTING SUMMARY

SOUTH AFRICA | WEEK 42 2021

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.