COVID-19 TESTING SUMMARY

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

SOUTH AFRICA | WEEK **41** 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 16 October 2021 (Week 41 of 2021).

HIGHLIGHTS

- The weekly number of reported tests continued to decrease, and in week 41 of 2021 177,137 tests were reported.
- In week 41 the testing rate was similar to the previous week in all provinces, and was highest in the Western Cape (423 per 100,000 persons) and lowest in Limpopo (69 per 100,000 persons).
- In week 41 the percentage testing positive was 2.6%, which was the lowest it has ever reached since the start of the epidemic.
- In week 41 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 41 was highest in the Northern Cape (8.8%), followed by the Free State (5.4%), and was less than 5% in all other provinces.

Executive Summary:

- In the period 1 March 2020 through 16 October 2021, 18,061,165 tests for SARS-CoV-2 have been reported nationally: 15,639,676 PCR and 2,421,489 antigen tests.
- The weekly number of reported tests continued to decrease and in week 41 it was 177,137 (147,028 PCR and 30,109 antigen) tests. Gauteng reported the largest proportion of tests (34.8%), followed by KwaZulu-Natal (19.9%) and Western Cape (16.7%).
- The overall testing rate decreased from 309 per 100,000 persons in week 40 to 297 per 100,000 persons in week 41.
- In week 41 the testing rate was similar to the previous week in all provinces, and was highest in the Western Cape (423 per 100,000 persons) and lowest in Limpopo (69 per 100,000 persons).
- The testing rate in week 41 was highest in the ≥80 years age group (687 per 100,000 persons).
- In week 41 the percentage testing positive was 2.6%, which was 0.7% lower than the previous week (3.3%, P<0.001), and the lowest ever reached since the start of the epidemic.
- In the past week the percentage testing positive decreased by 1.0% in the public sector (4.5% in week 40 to 3.5% in week 41, P<0.001) and by 0.5% in the private sector (2.4% in week 40 to 1.9% in week 41, P<0.001).
- In week 41 compared to the previous week, the percentage testing positive remained unchanged in the North West and Limpopo provinces, and continued to decrease in all other provinces.
- The percentage testing positive in week 41 was highest in the Northern Cape (8.8%), followed by the Free State (5.4%), and was less than 5% in all other provinces.
- The percentage testing positive was highest in individuals aged 15-19 years (5.2%), followed by 10-14 years (4.6%).
- Health sub-districts showing the highest percentage testing positive were concentrated in the Northern Cape (n=13), with six in the Free State, and two each in the Eastern Cape and Western Cape.
- Antigen tests accounted for 17.0% (30,109/177,137) of tests reported in week 41, however the number of antigen tests is likely underestimated due to under-reporting and delayed reporting of antigen tests.
- In week 41 the public sector accounted for 76.1% of antigen tests reported. The majority of antigen tests have been reported from KwaZulu-Natal (33.1%) 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 41 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 were <2 days in all provinces in the past week, with the largest decrease observed in Limpopo province (4.1 days in week 40 to 0.9 days in week 41).
- The mean turnaround time for antigen tests reported in week 41 was 11.0 days in the public sector and 0.1 days in the private sector.

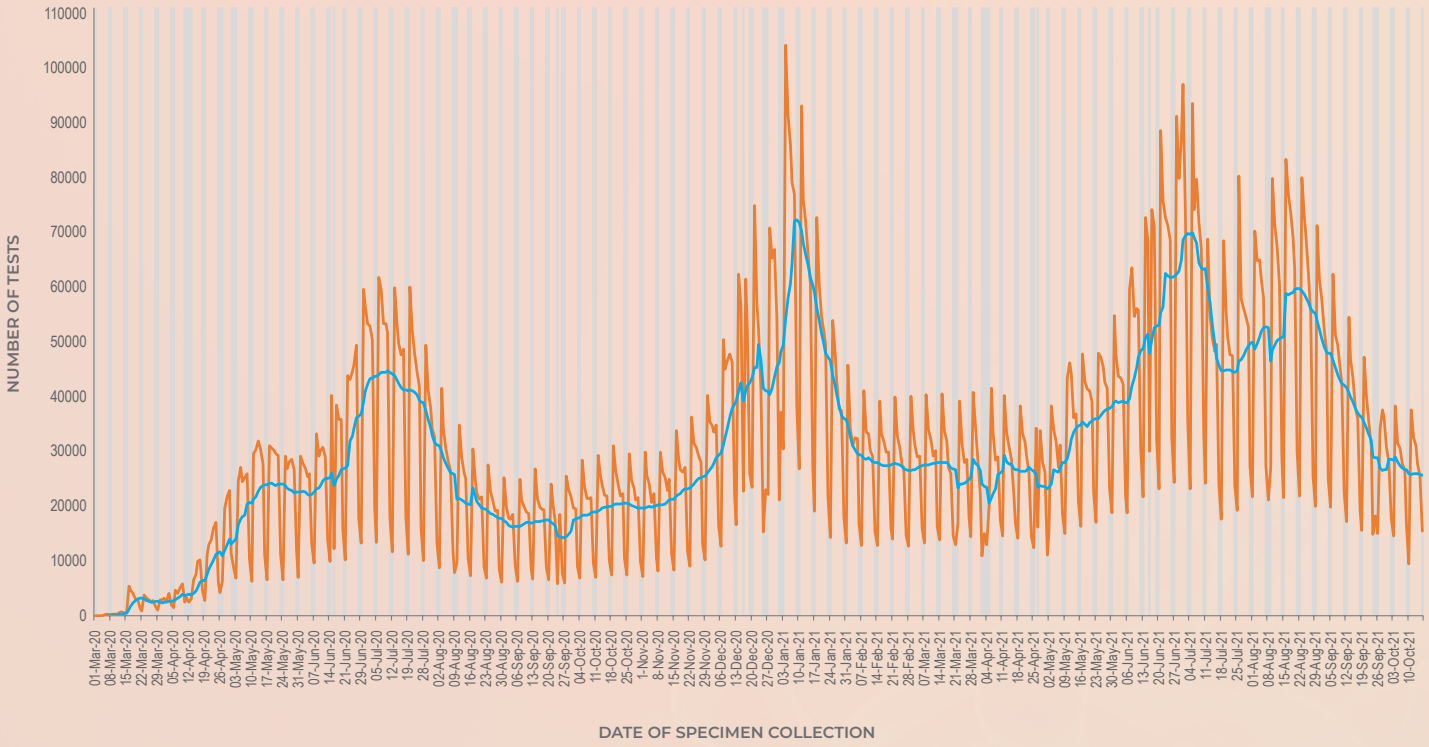

Figure 1. Number of SARS-CoV-2 tests reported by date of specimen collection, South Africa, 1 March 2020 – 16 October 2021. Blue line shows the 7-day moving average of the number of tests reported. Grey bars highlight weekend days and public holidays

Table 1. Weekly number of SARS-CoV-2 tests and positive tests reported, South Africa, 3 January – 16 October 2021

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
1	03-Jan-21	501257 (2.8)	151037	30.1
2	10-Jan-21	418010 (2.3)	104799	25.1
3	17-Jan-21	327399 (1.8)	63261	19.3
4	24-Jan-21	249513 (1.4)	34639	13.9
5	31-Jan-21	203654 (1.1)	22361	11.0
6	07-Feb-21	193294 (1.1)	16470	8.5
7	14-Feb-21	190643 (1.1)	12184	6.4
8	21-Feb-21	184661 (1.0)	10383	5.6
9	28-Feb-21	189686 (1.1)	8687	4.6
10	07-Mar-21	193384 (1.1)	8325	4.3
11	14-Mar-21	185499 (1.0)	8152	4.4
12	21-Mar-21	173007 (1.0)	7351	4.2
13	28-Mar-21	163931 (0.9)	7060	4.3
14	04-Apr-21	180834 (1.0)	7290	4.0
15	11-Apr-21	184732 (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	193874 (1.1)	13452	6.9
19	09-May-21	239951 (1.3)	19929	8.3
20	16-May-21	248431 (1.4)	24207	9.7
21	23-May-21	262320 (1.5)	29710	11.3
22	30-May-21	269916 (1.5)	35969	13.3
23	06-Jun-21	335726 (1.9)	58855	17.5
24	13-Jun-21	366404 (2.0)	86649	23.6
25	20-Jun-21	428439 (2.4)	116695	27.2
26	27-Jun-21	483586 (2.7)	143808	29.7
27	04-Jul-21	438730 (2.4)	139328	31.8
28	11-Jul-21	316592 (1.8)	99285	31.4
29	18-Jul-21	308384 (1.7)	86798	28.1
30	25-Jul-21	344379 (1.9)	86779	25.2
31	01-Aug-21	365117 (2.0)	86441	23.7
32	08-Aug-21	352169 (1.9)	81872	23.2
33	15-Aug-21	413971 (2.3)	93772	22.7
34	22-Aug-21	384391 (2.1)	76882	20.0
35	29-Aug-21	332514 (1.8)	53843	16.2
36	05-Sep-21	291531 (1.6)	37852	13.0
37	12-Sep-21	252678 (1.4)	23406	9.3
38	19-Sep-21	200018 (1.1)	13656	6.8
39	26-Sep-21	197344 (1.1)	9201	4.7
40	03-Oct-21	184359 (1.0)	6161	3.3
41	10-Oct-21	177137 (1.0)	4597	2.6
	Total	**18,061,165 (100.0)**	**3,103,550**	

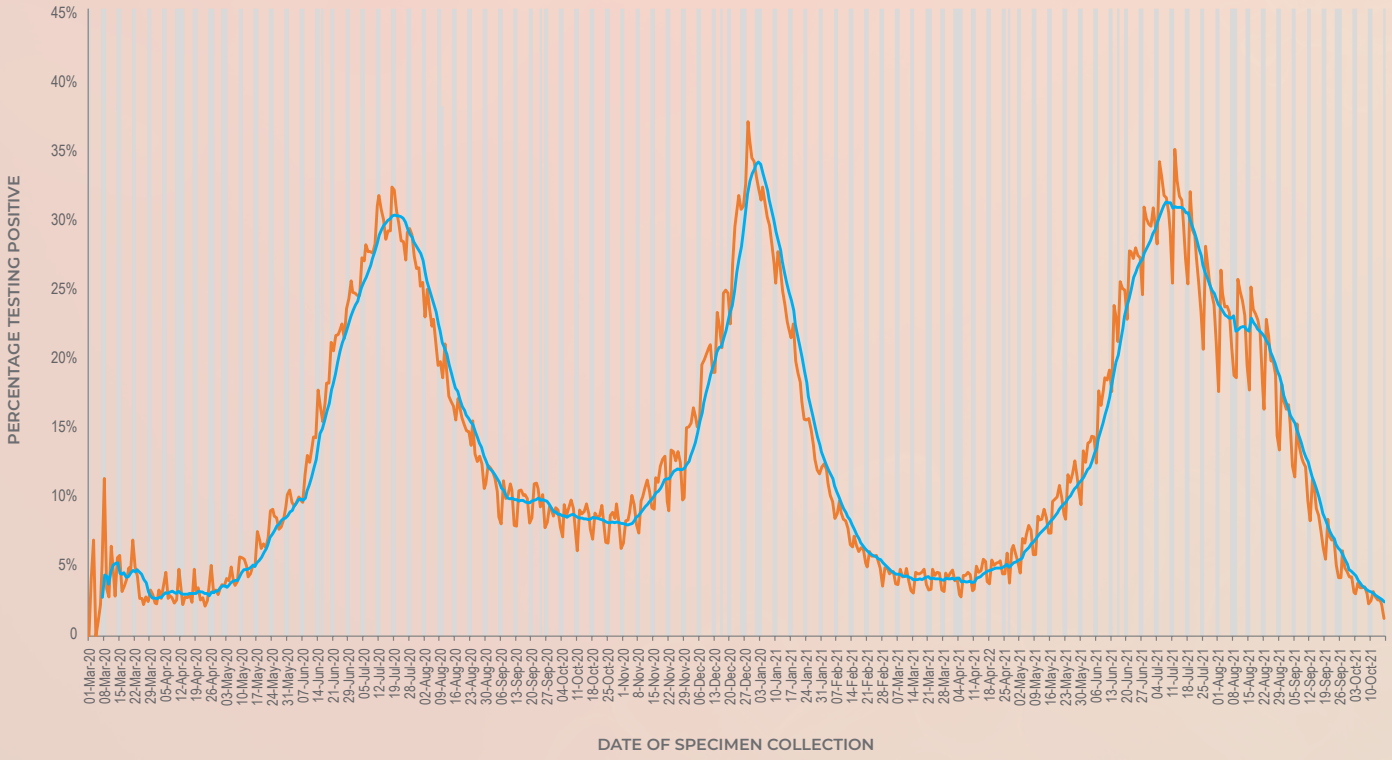

Figure 2. Percentage of tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March 2020 – 16 October 2021. Blue line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

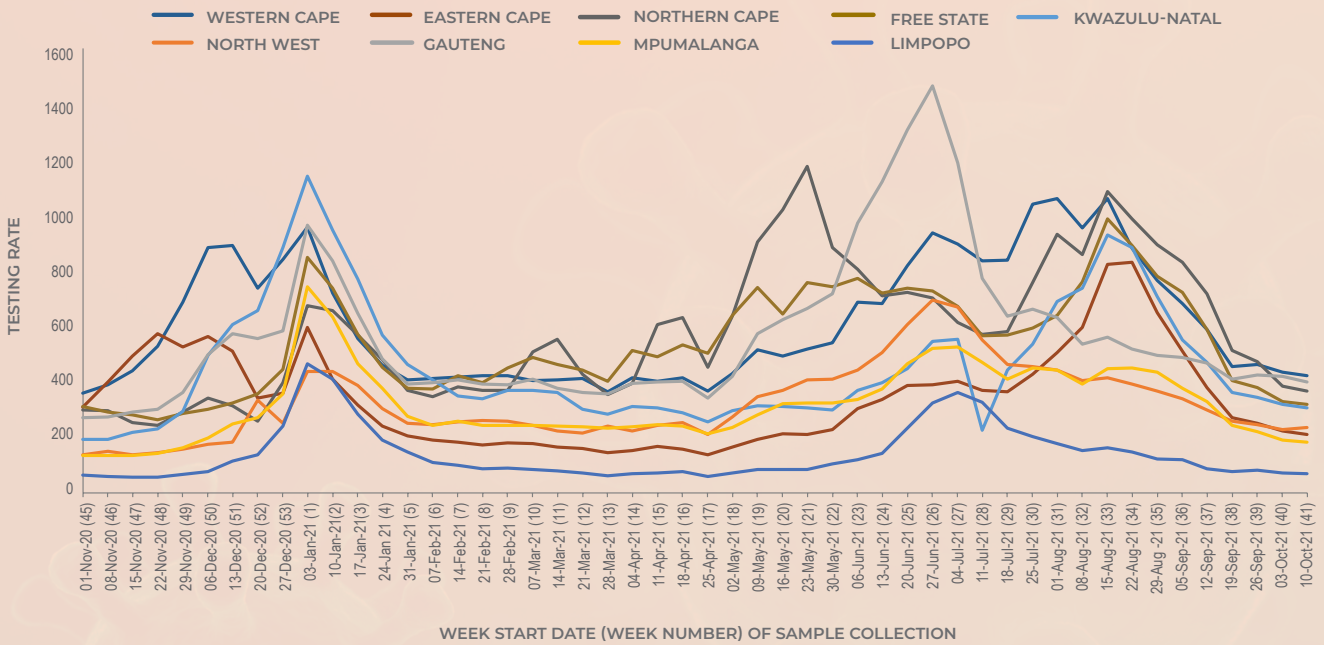

Figure 3. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 November 2020 – 16 October 2021

Table 2. Weekly number of tests and positive tests reported by province, South Africa, 26 September – 16 October 2021

		26 Sep - 2 Oct 2021		3-9 Oct 2021		10-16 Oct 2021			
Province	**Population[a]**	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**	**Tests per 100,000 persons**	**Change in percentage positive[b]**
Western Cape	7005741	32409	2012 (6.2)	30490	1258 (4.1)	29644	1001 (3.4)	423	-0.7%
Eastern Cape	6734001	16893	1093 (6.5)	14993	697 (4.6)	14201	434 (3.1)	211	-1.6%
Northern Cape	1292786	6118	844 (13.8)	4975	527 (10.6)	4730	415 (8.8)	366	-1.8%
Free State	2928903	11105	1018 (9.2)	9649	637 (6.6)	9304	507 (5.4)	318	-1.2%
KwaZulu-Natal	11531628	39717	1837 (4.6)	36836	1167 (3.2)	35296	850 (2.4)	306	-0.8%
North West	4108816	10071	494 (4.9)	9356	323 (3.5)	9624	299 (3.1)	234	-0.3%
Gauteng	15488137	65859	1334 (2.0)	65026	1148 (1.8)	61686	810 (1.3)	398	-0.5%
Mpumalanga	4679786	10335	433 (4.2)	8892	328 (3.7)	8566	216 (2.5)	183	-1.2%
Limpopo	5852553	4830	135 (2.8)	4136	76 (1.8)	4065	65 (1.6)	69	-0.2%
Unknown		7	1 (14.3)	6	0 (0.0)	21	0 (0.0)		
Total	**59622350**	**197344**	**9201 (4.7)**	**184359**	**6161 (3.3)**	**177137**	**4597 (2.6)**	**297**	**-0.7%**

a 2020 Mid-year population Statistics SA

b Current week compared to previous week

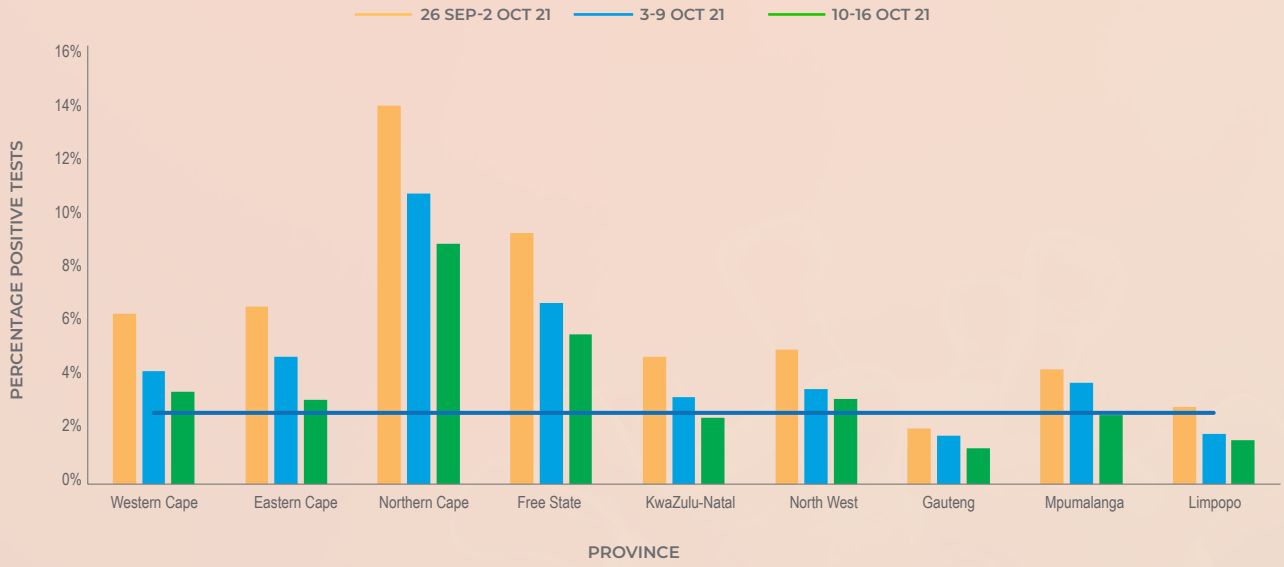

Figure 4. Weekly percentage testing positive by province, South Africa, 26 September – 16 October 2021. The horizontal blue line shows the national mean for week 41, beginning 10 October 2021

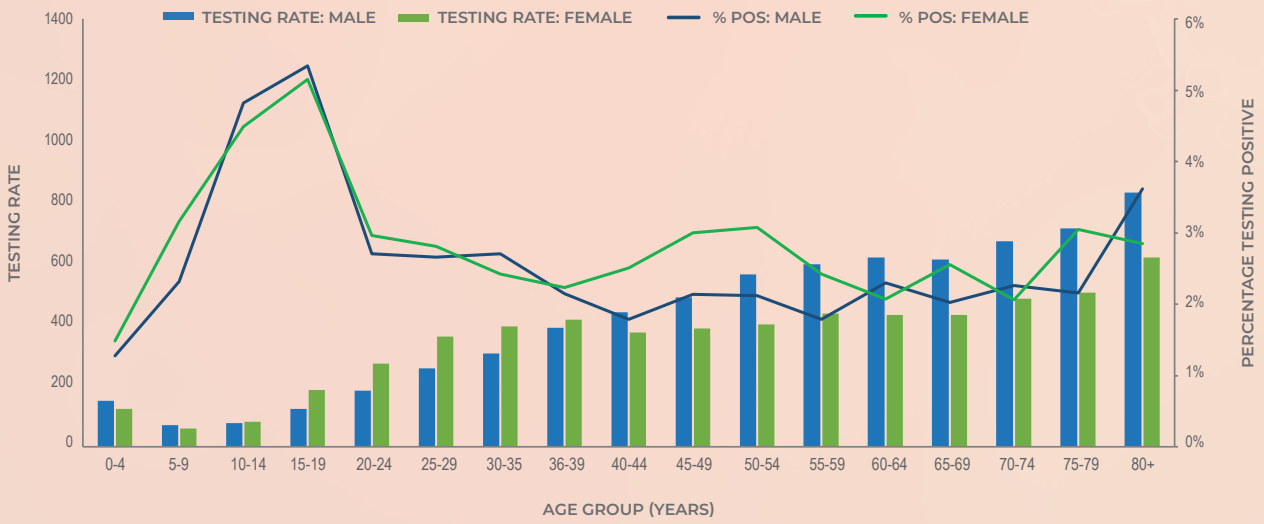

Figure 5. Testing rates per 100,000 persons and percentage testing positive by age group and sex, South Africa, week 41, 10-16 October 2021

Table 3. Health sub-districts with the highest proportion testing positive based on public and private sector data for the week of 10-16 October 2021

Health district or sub-district	Province	PTP (95% CI)	Previous week
Khâi-Ma	Northern Cape	0.260 (0.125-0.394)	0.090 (0.006-0.174)
Karoo Hoogland	Northern Cape	0.242 (0.169-0.315)	0.210 (0.127-0.293)
Letsemeng	Free State	0.207 (0.114-0.300)	0.159 (0.076-0.242)
Siyancuma	Northern Cape	0.191 (0.116-0.265)	0.168 (0.110-0.225)
Cederberg	Western Cape	0.165 (0.017-0.312)	...
Ditsobotla	North West	0.160 (0.051-0.270)	0.034 (0.000-0.081)
Hantam	Northern Cape	0.152 (0.099-0.206)	0.207 (0.149-0.265)
Ga-Segonyana	Northern Cape	0.142 (0.092-0.192)	0.193 (0.142-0.244)
Tsantsabane	Northern Cape	0.133 (0.065-0.202)	0.132 (0.062-0.202)
Setsoto	Free State	0.132 (0.076-0.188)	0.122 (0.073-0.172)
Richtersveld	Northern Cape	0.131 (0.054-0.208)	...
Naledi	Free State	0.129 (0.000-0.267)	0.092 (0.000-0.215)
Dikgatlong	Northern Cape	0.125 (0.043-0.206)	0.235 (0.122-0.347)
Baviaans	Eastern Cape	0.118 (0.027-0.210)	0.351 (0.201-0.500)
Gamagara	Northern Cape	0.112 (0.069-0.156)	0.069 (0.037-0.101)
Ikwezi	Eastern Cape	0.104 (0.006-0.202)	...
Kopanong	Free State	0.102 (0.055-0.148)	0.120 (0.069-0.171)
Ubuntu	Northern Cape	0.102 (0.017-0.187)	0.207 (0.057-0.357)
Cape Agulhas	Western Cape	0.096 (0.023-0.170)	0.090 (0.021-0.160)
Phokwane	Northern Cape	0.094 (0.038-0.150)	0.121 (0.067-0.176)
Nketoana	Free State	0.094 (0.050-0.138)	0.086 (0.043-0.130)
Greater Letaba	Limpopo	0.091 (0.000-0.212)	0.043 (0.000-0.127)
Nama Khoi	Northern Cape	0.090 (0.059-0.121)	0.079 (0.050-0.108)
Emthanjeni	Northern Cape	0.089 (0.050-0.127)	0.078 (0.035-0.120)
Ngwathe	Free State	0.088 (0.025-0.151)	0.016 (0.000-0.048)

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.

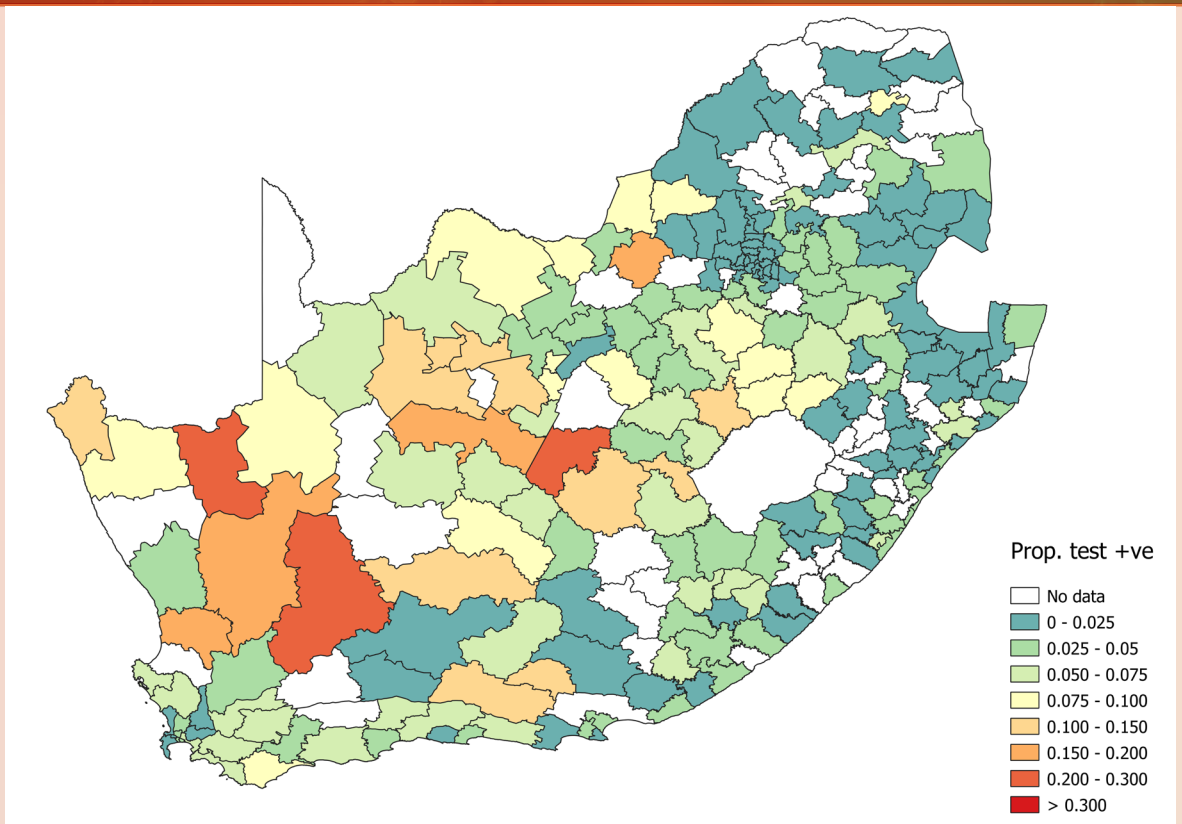

Figure 6. Proportion testing positive by health sub-district in South Africa for the week of 10-16 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

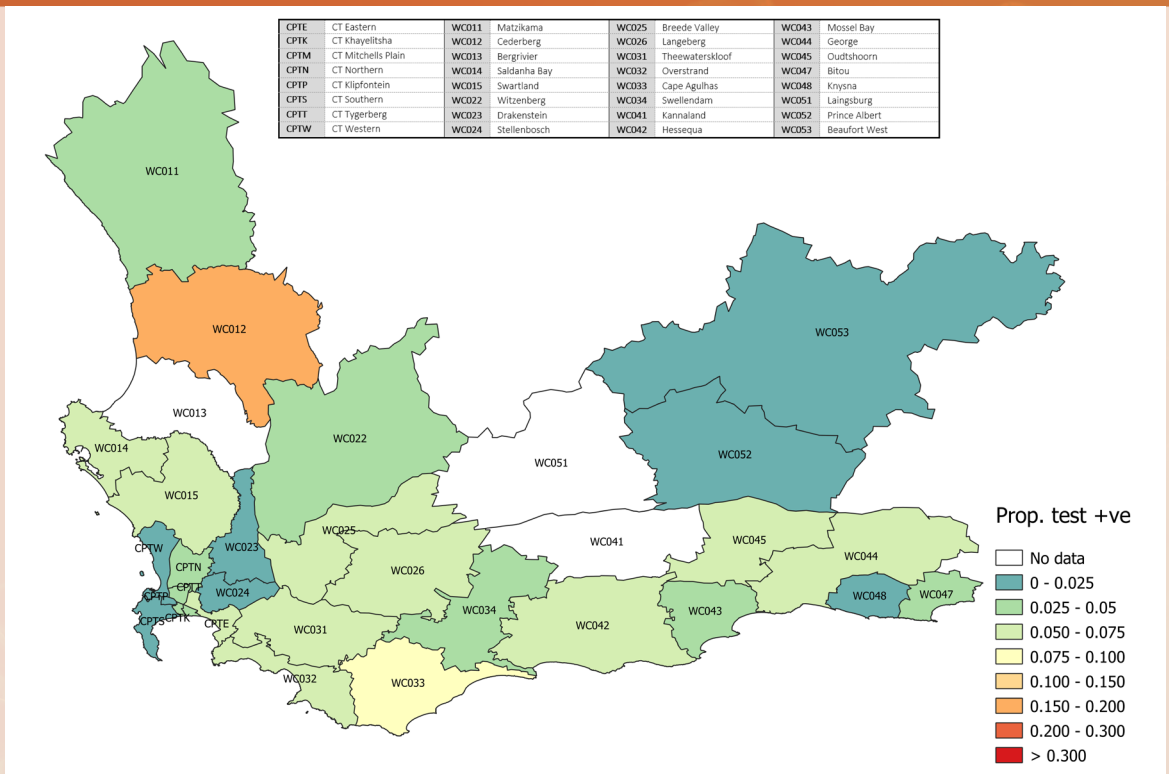

Figure 7. Proportion testing positive by health sub-district in the Western Cape Province for the week of 10-16 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%

BUF	Buffalo City	EC122	Mnquma	EC135	Intsika Yethu	EC155	Nyandeni
EC101	Camdeboo	EC123	Great Kei	EC136	Emalahleni	EC156	Mhlontlo
EC102	Blue Crane Route	EC124	Amahlathi	EC137	Engcobo	EC157	King Sabata Dalindyebo
EC103	Ikwezi	EC126	Ngqushwa	EC138	Sakhisizwe	EC441	Matatiele
EC104	Makana	EC127	Nkonkobe	EC141	Elundini	EC442	Umzimvubu
EC105	Ndlambe	EC128	Nxuba	EC142	Senqu	EC443	Mbizana
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	Ngquza Hill	NMAB	Nelson Mandela Bay B
EC109	Kou-Kamma	EC134	Lukanji	EC154	Port St Johns	NMAC	Nelson Mandela Bay C
EC121	Mbhashe						

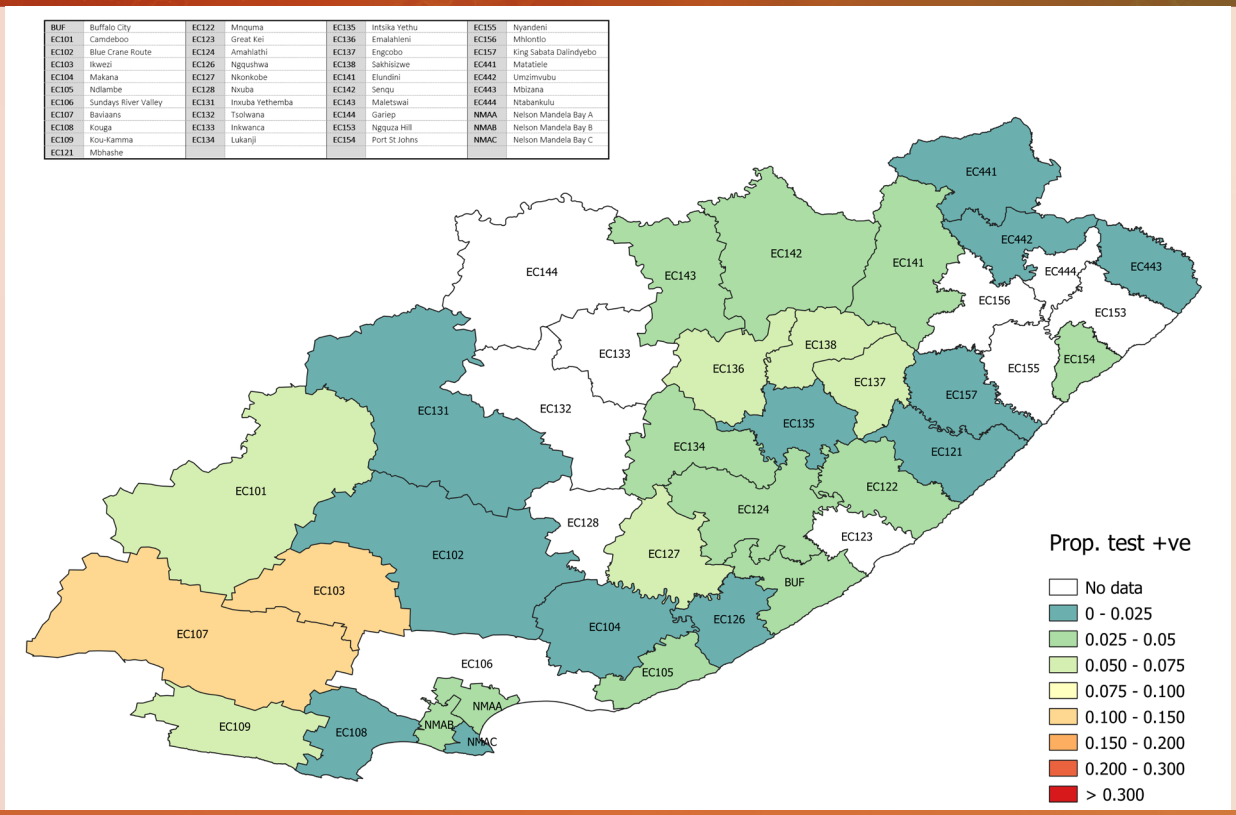

Figure 8. Proportion testing positive by health sub-district in the Eastern Cape Province for the week of 10-16 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

NC061	Richtersveld	NC074	Kareeberg	NC085	Tsantsabane
NC062	Nama Khoi	NC075	Renosterberg	NC086	Kgatelopele
NC064	Kamiesberg	NC076	Thembelihle	NC091	Sol Plaatjie
NC065	Hantam	NC077	Siyathemba	NC092	Dikgatlong
NC066	Karoo Hoogland	NC078	Siyancuma	NC093	Magareng
NC067	Khâi-Ma	NC081	Mier	NC094	Phokwane
NC071	Ubuntu	NC082	Kai !Garib	NC451	Joe Morolong
NC072	Umsobomvu	NC083	//Khara Hais	NC452	Ga-Segonyana
NC073	Emthanjeni	NC084	!Kheis	NC453	Gamagara

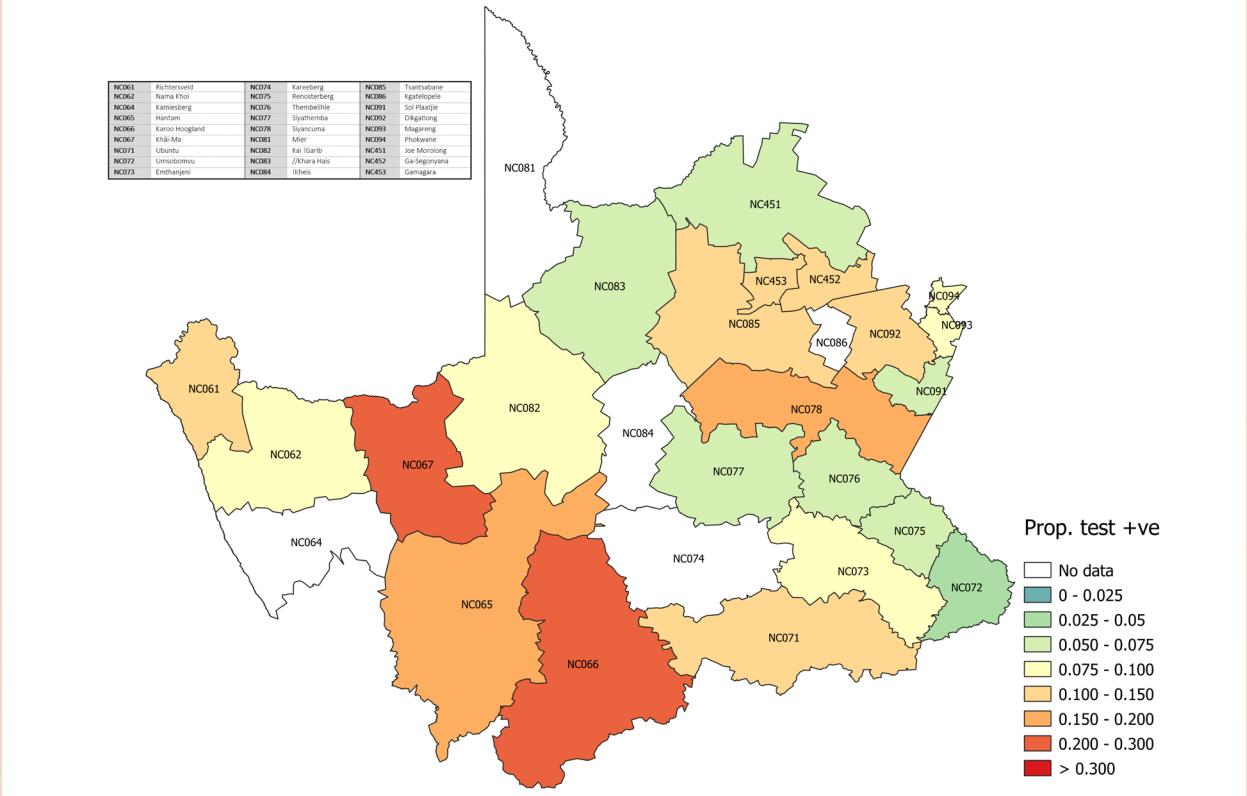

Figure 9. Proportion testing positive by health sub-district in Northern Cape Province for the week of 10-16 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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

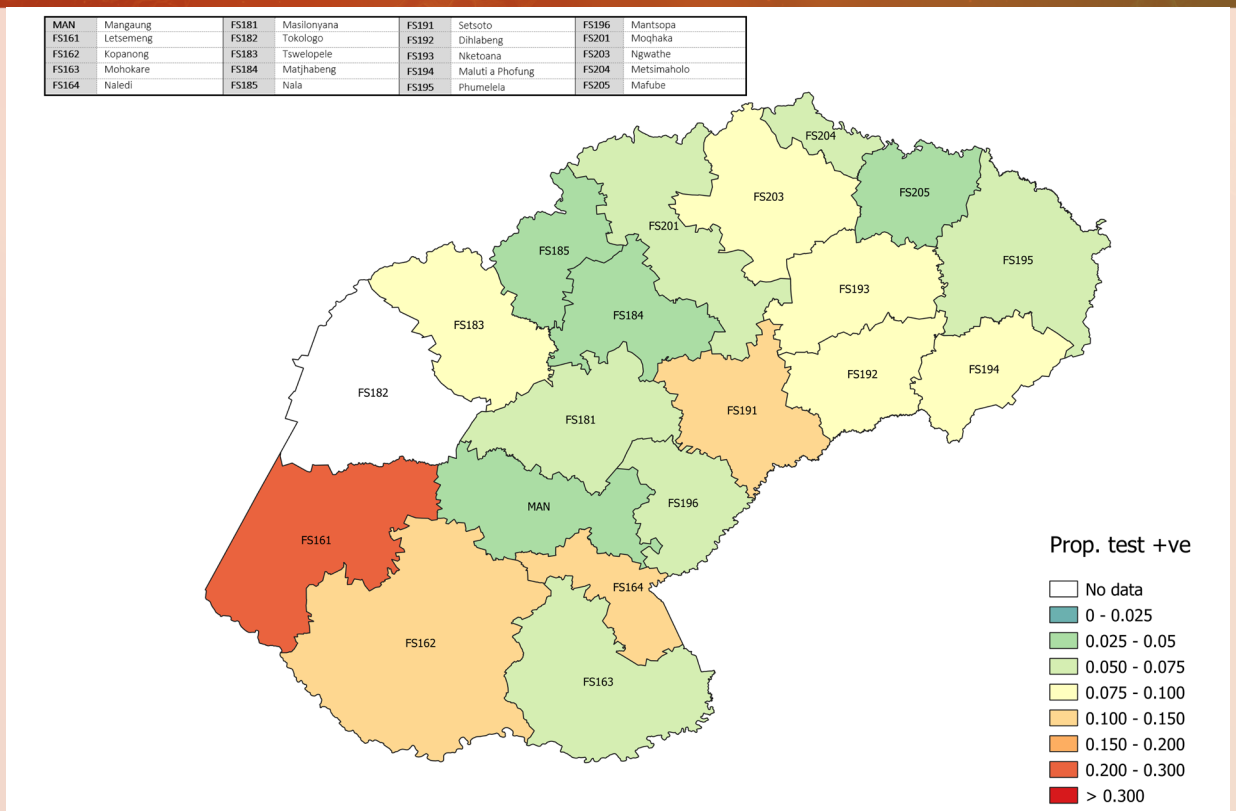

Figure 10. Proportion testing positive by health sub-district in Free State Province for the week of 10-16 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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

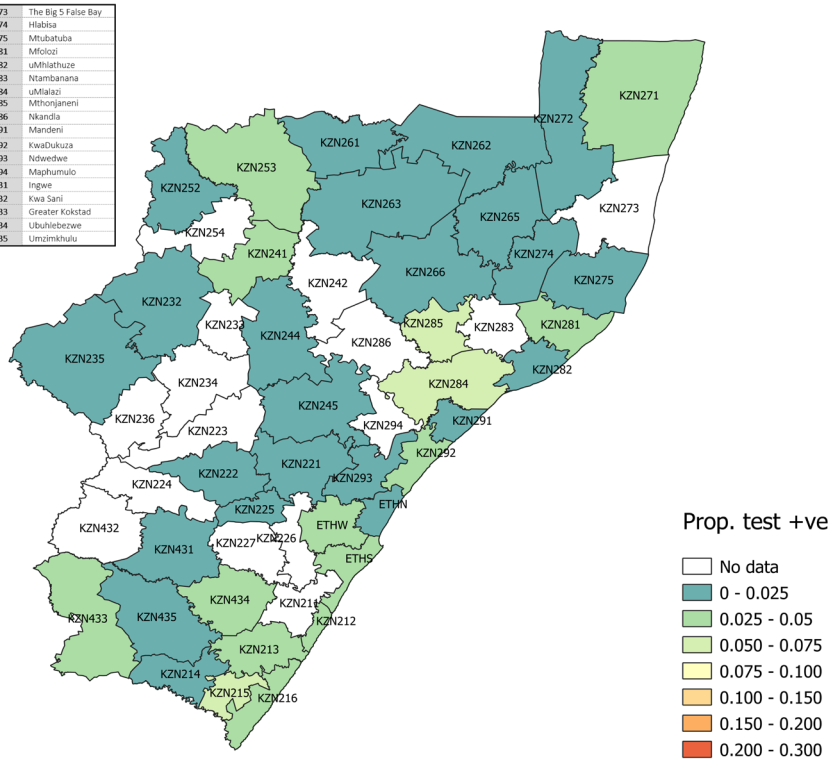

Figure 11. Proportion testing positive by health sub-district in KwaZulu-Natal Province for the week of 10-16 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

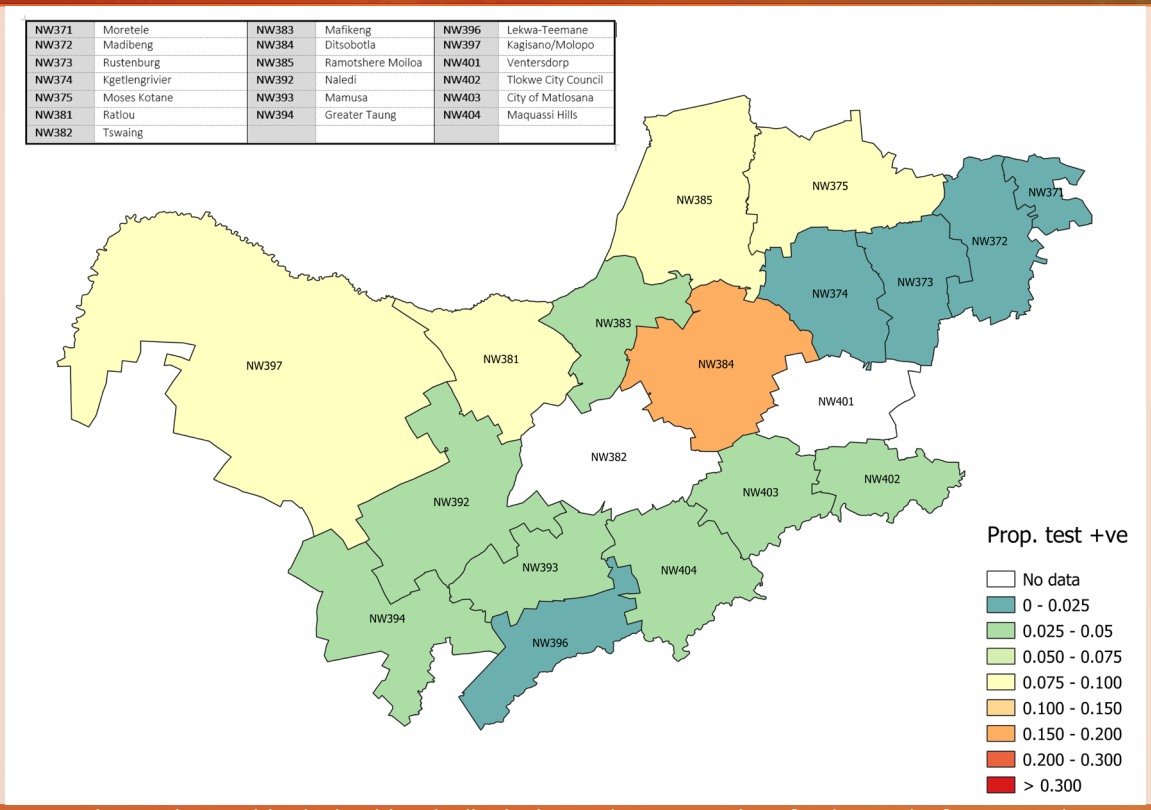

Figure 12. Proportion testing positive by health sub-district in North West Province for the week of 10-16 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

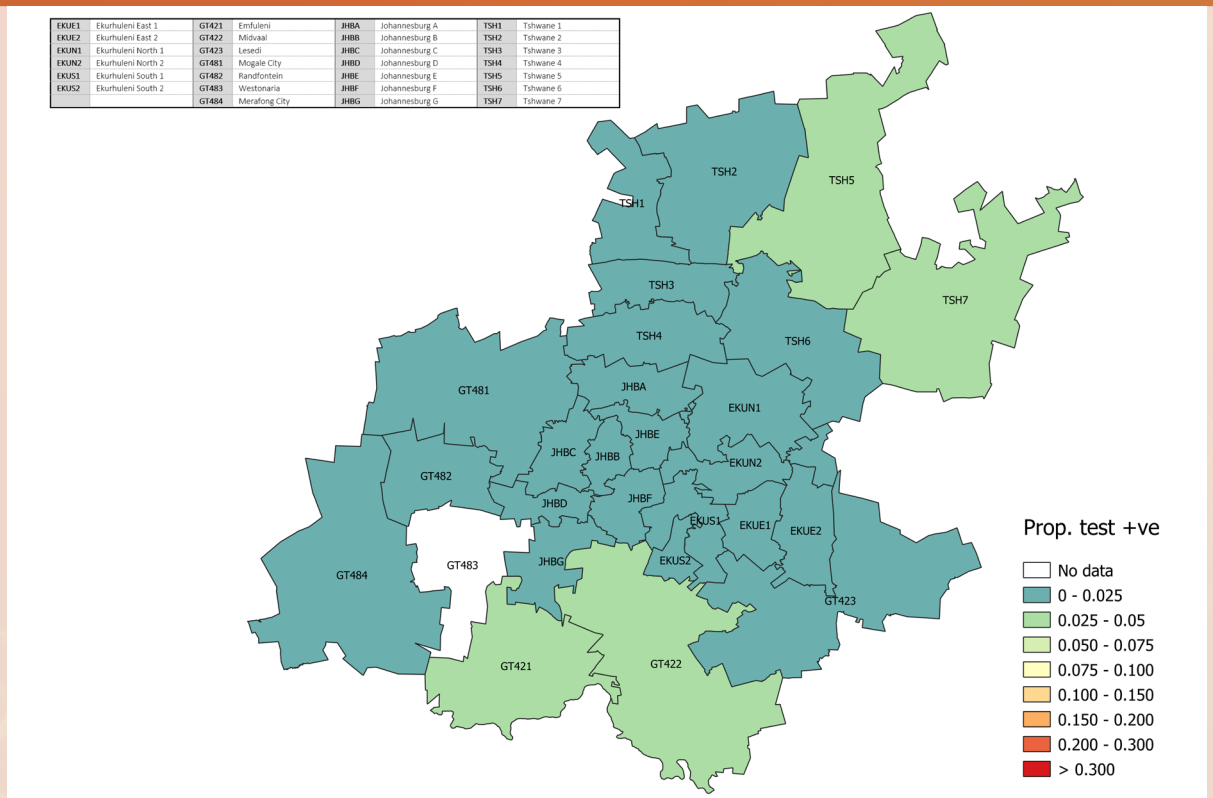

Figure 13. Proportion testing positive by health sub-district in Gauteng Province for the week of 10-16 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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

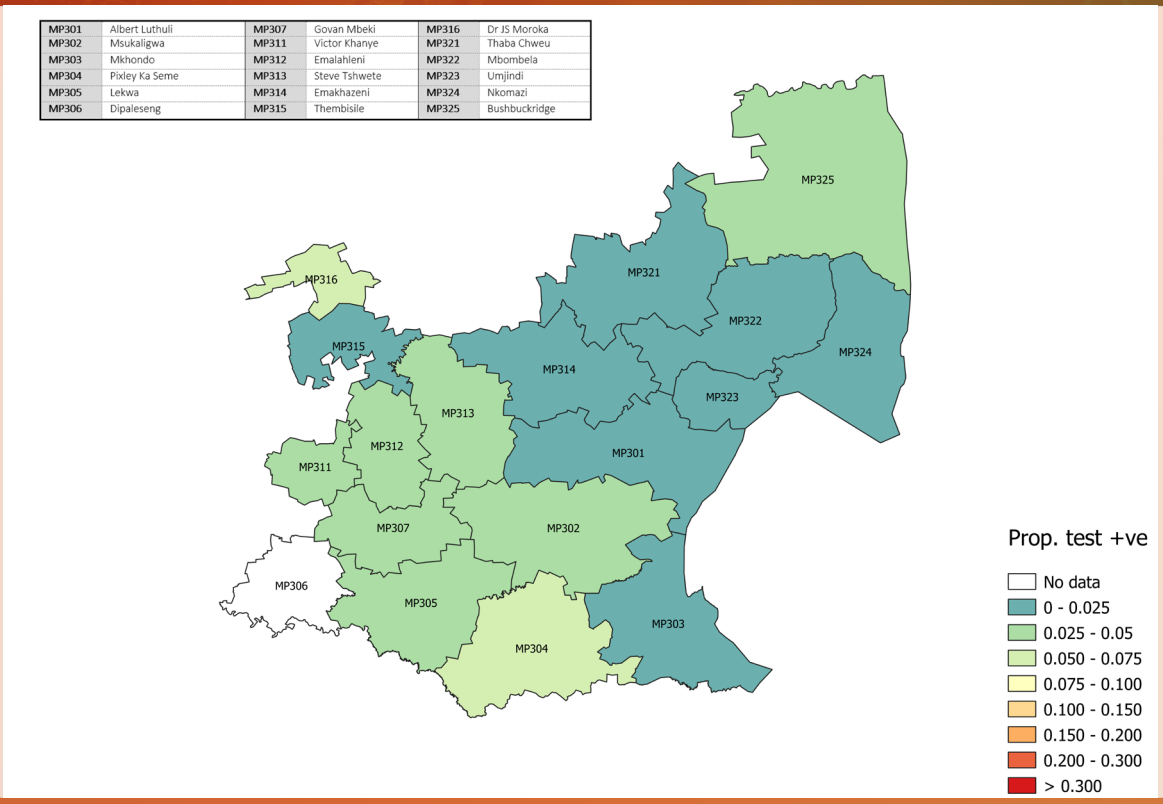

Figure 14. Proportion testing positive by health sub-district in Mpumalanga Province for the week of 10-16 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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

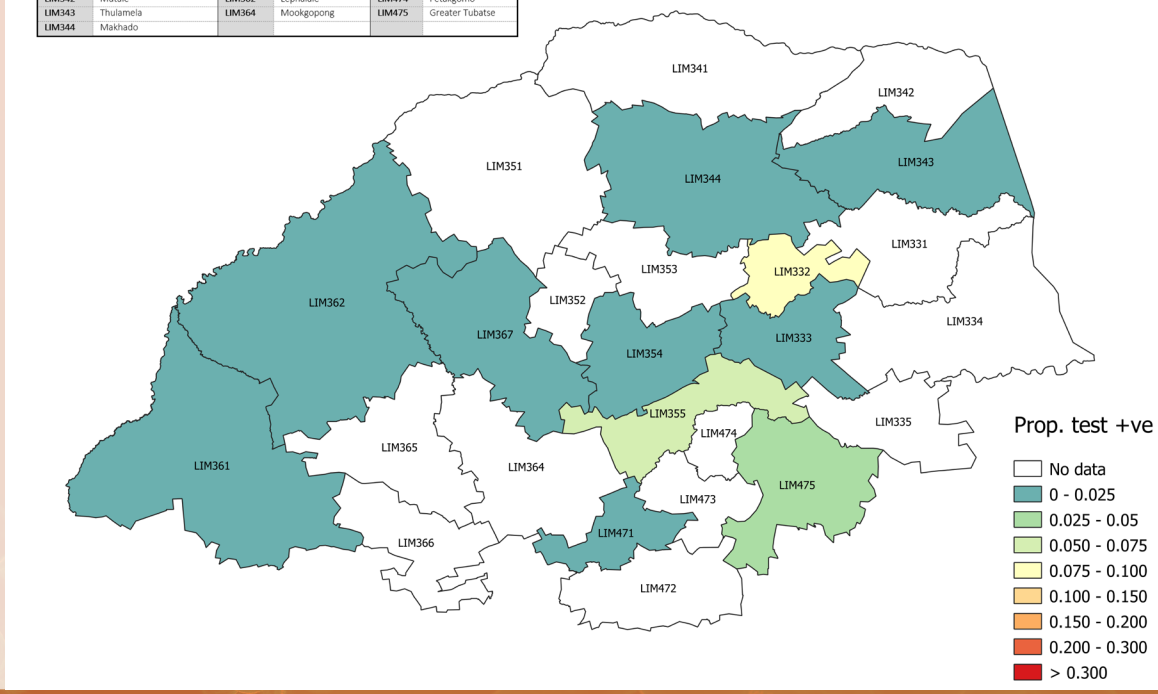

Figure 15. Proportion testing positive by health sub-district in Limpopo Province for the week of 10-16 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

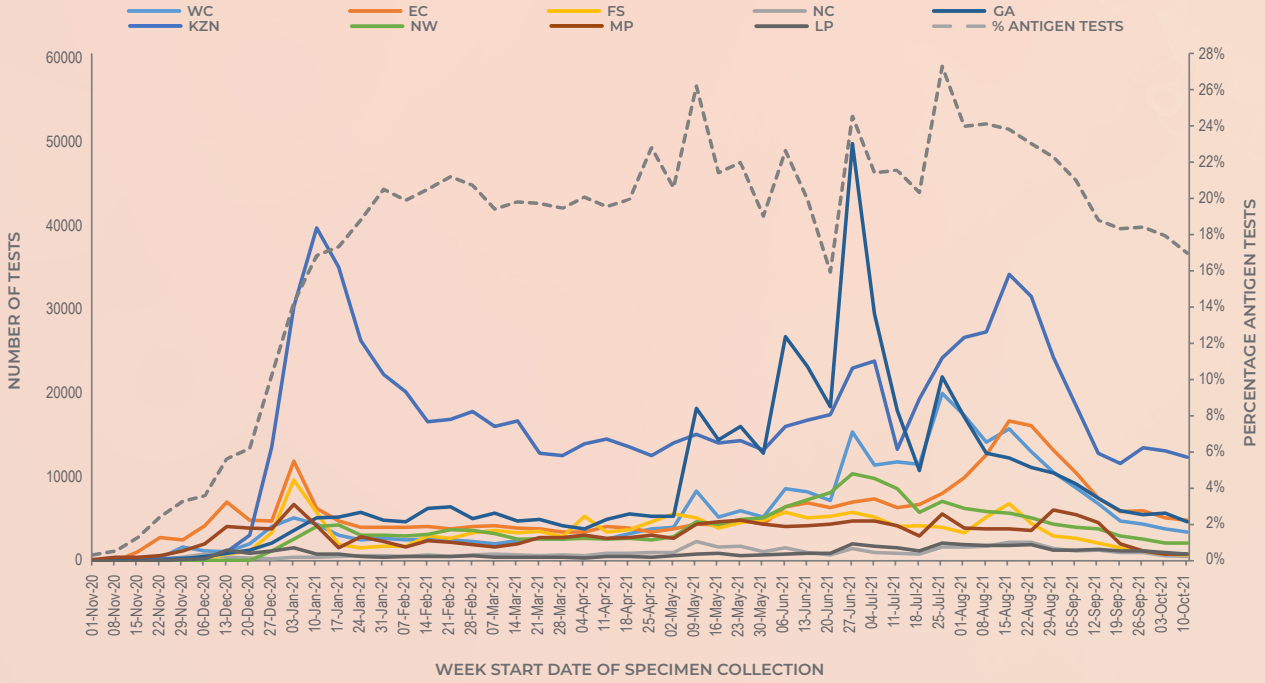

Figure 16. Number of antigen tests by province and overall percentage antigen tests, South Africa, 1 November 2020 – 16 October 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GA Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

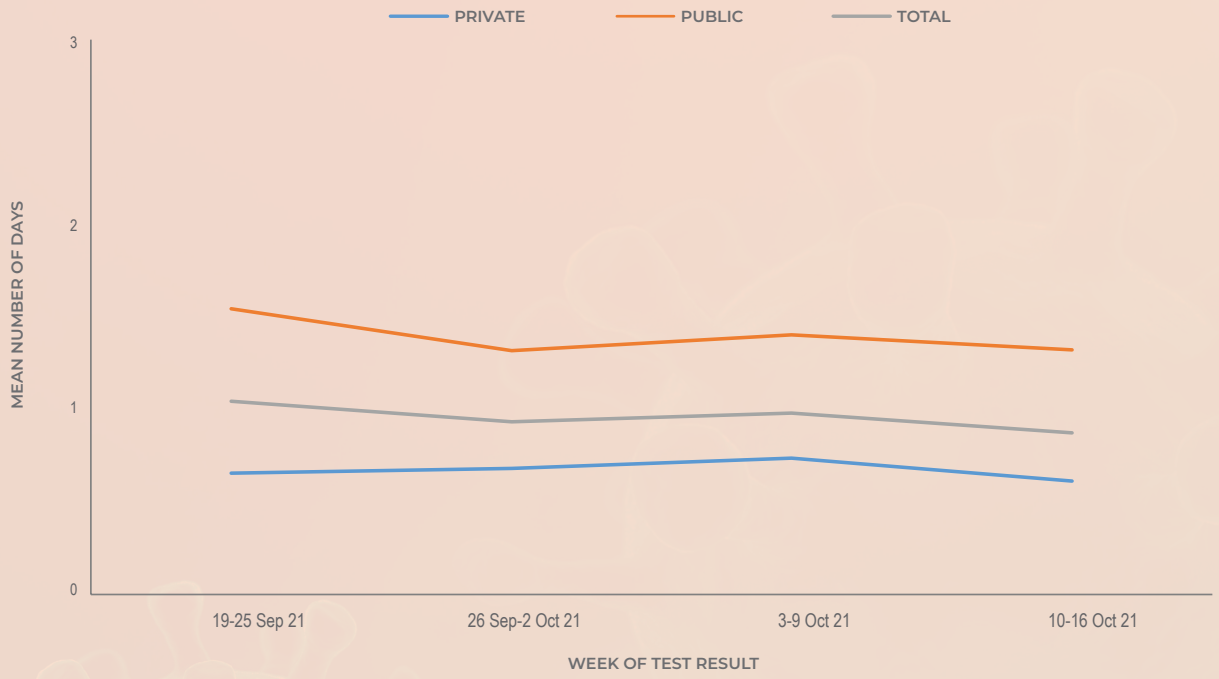

Figure 17. Mean number of days between date of specimen collection and date of test result for PCR tests by week of test result, South Africa, 19 September – 16 October 2021

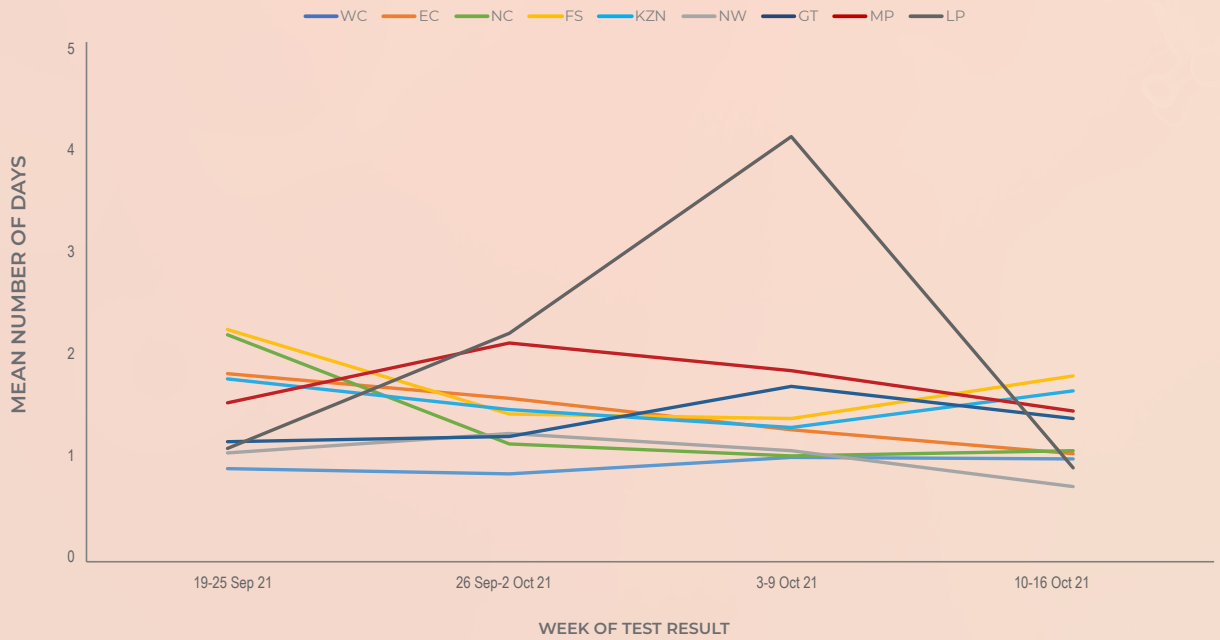

Figure 18. Mean number of days between date of specimen collection and date of test result for PCR tests in the public sector by week of test result and province, South Africa, 19 September – 16 October 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GT Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

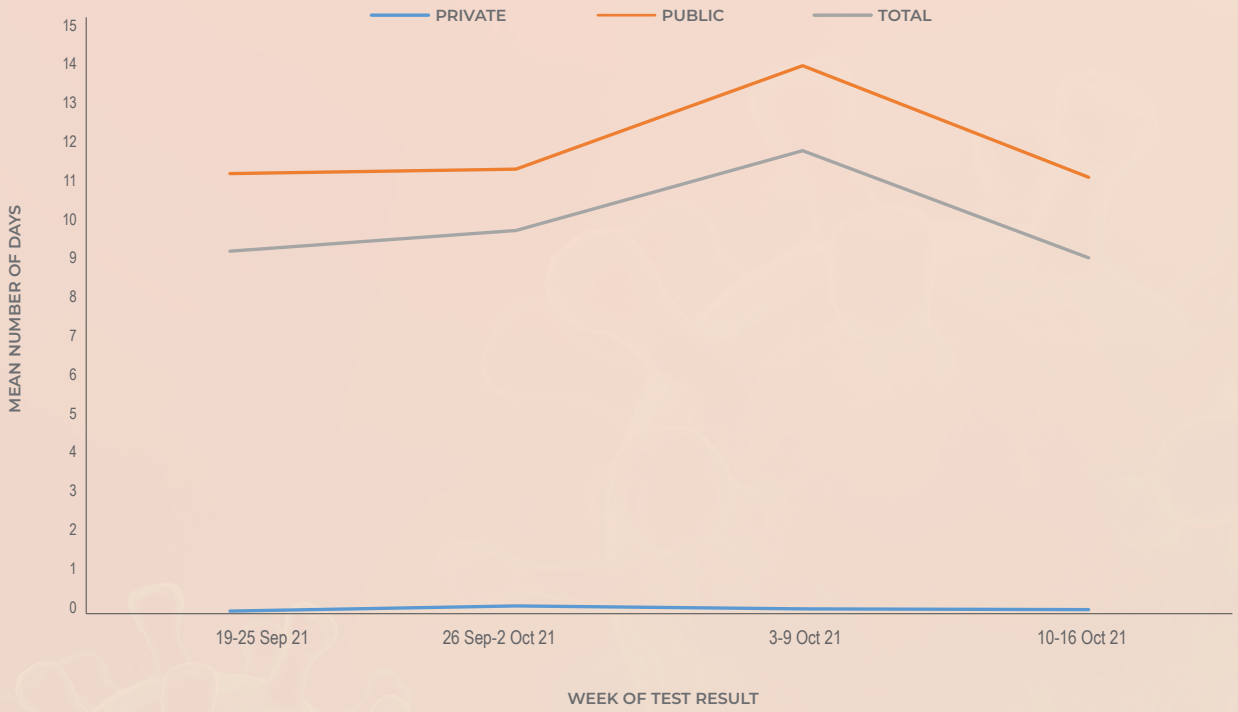

Figure 19. Mean number of days between date of specimen collection and date of test result for antigen tests by week of test result, South Africa, 19 September – 16 October 2021

Methods

TTesting for SARS-CoV-2 began on 28 January 2020 at the NICD and after the first case was confirmed on 5th March 2020, testing was expanded to a larger network of private and NHLS laboratories. Laboratory testing was conducted for people meeting the case definition for persons under investigation (PUI). This definition was updated several times over the reporting period but at different times included (i) symptomatic individuals seeking testing, (ii) hospitalised individuals for whom testing was done, (iii) individuals in high-risk occupations, (iv) individuals in outbreak settings, and (v) individuals identified through community screening and testing (CST) programmes which were implemented in April 2020 and was discontinued from the week beginning 17th May. CST was implemented differently in different provinces, and ranged from mass screening approaches (including asymptomatic individuals) to screening of individuals in contact with a confirmed case to targeted testing of clusters of cases. Respiratory specimens were submitted to testing laboratories. Testing was performed using reverse transcriptase real-time PCR, which detects SARS-CoV-2 viral genetic material. Laboratories used any one of several in-house and commercial PCR assays to test for the presence of SARS-CoV-2 RNA. Testing for SARS-CoV-2 using rapid antigen-based tests was implemented towards the end of October 2020. Results of reported rapid antigen-based tests are included in this report, however data are incomplete and efforts are ongoing to improve data completeness.

Test results were automatically fed into a data warehouse after result authorisation. We excluded specimens collected outside South Africa and duplicate entries of the same test for an individual. From week 48 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. 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.